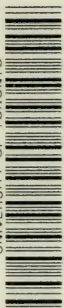
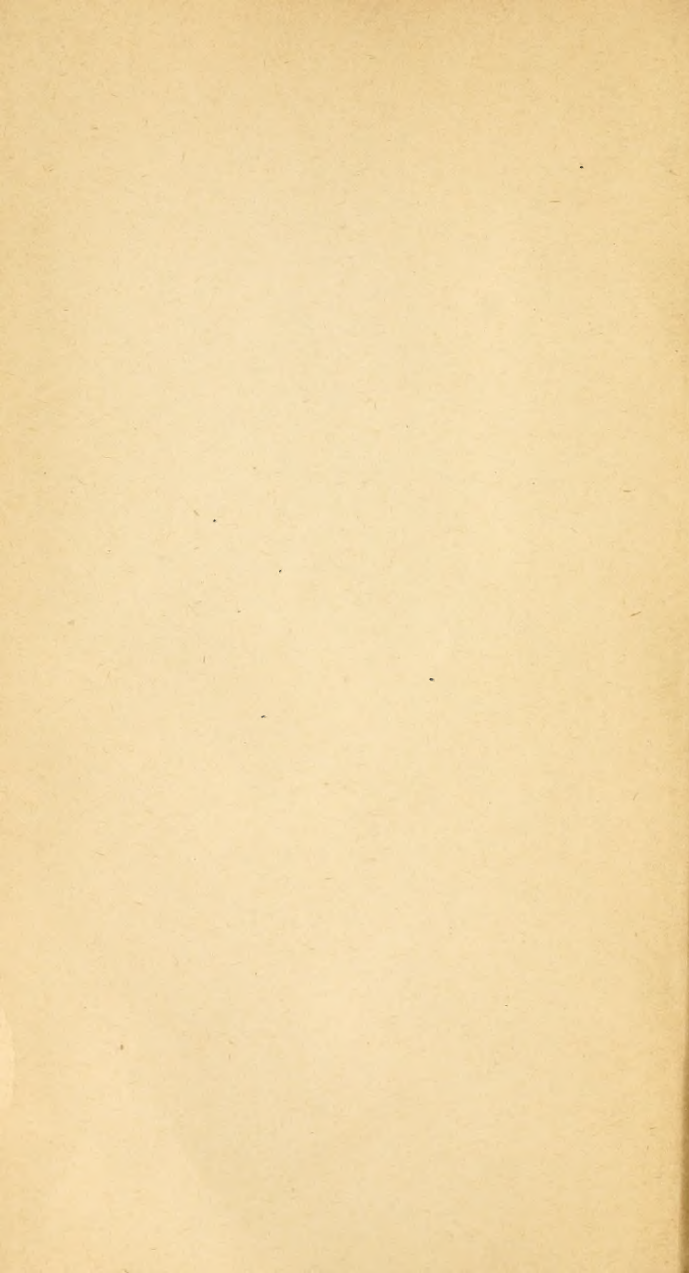



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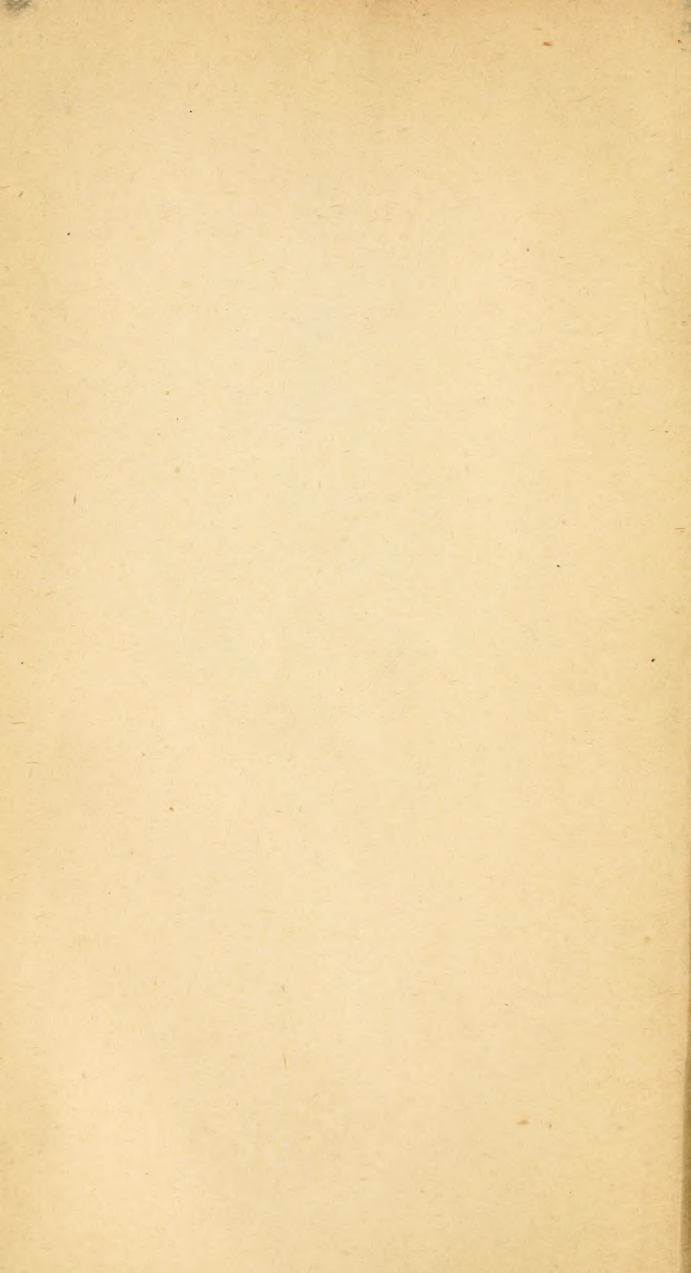
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Mollusca
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British Museum (Nat. Hist. Dept. of Zoology)

CATALOGUE
OF
AURICULIDÆ, PROSERPINIDÆ,
AND
TRUNCATELLIDÆ
IN
THE COLLECTION
OF THE
BRITISH MUSEUM.

BY
DR. LOUIS PFEIFFER.

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P R E F A C E.

THE object of the present Catalogue is to give a description of the species of Shells belonging to these three Families of Gasteropodous Mollusca; at the same time indicating by a B.M. in the margin those now contained in the British Museum Collection.

JOHN EDWARD GRAY.

British Museum.

CATALOGUE

OF

AURICULIDÆ.

The *Auriculidæ* are a family of Mollusca, which breathe the external air by lung-like organs, and have no operculum. They are distinguished from the other families of Pulmonata by the following characters:—

The animal is hermaphrodite; its head terminates in an obtuse, somewhat fringed snout; tentacles two, rather cylindrical, which cannot be retracted like those of *Helicidæ*; eyes situated near the inner base of the tentacles; mantle thin, with the margin thickened; foot elongate, bearing on its middle the spiral part of the body.

Shell spiral, variously shaped; pillar generally plaited in all ages; body of the penultimate whorl usually toothed or plaited; peritreme sharp and straight, or expanded, thickened, often toothed or transversely ribbed.

Auriculacea (part.), *Lamarck*, 1809, *Phil. Zool.* i. 321.

Blainv. 1824, *Dict. Sc. Nat.* xxxii. 245, et *Malacol.* 451.

Menke, 1830, *Syn.* ed. 2. 35.

Deshayes, 1830, *Enc. Méth.* ii. 84. 96; iii. 553. t. 763.

Anton, 1839, *Verzeichn.* 48.

L. Pfeiffer, 1841, *Symb. Hist. Helic.* i. 4, et 1853, *Z. f. M.* x. 8.

G. B. Sowerby, 1842, *Conch. Man.* ed. 2. 77.

Reeve, 1842, *Conch. Syst.* ii. 103.

Küster, 1844, *Mon. Auric. in Chemn. Conch.* ed. nov. i. 16. 3.

A. Catlow, 1845, *Conch. Nomencl.* 178.

Herrmannsen, 1847, *Ind. Gen. Malac.* i. 93.

Troschel, 1848, in *Wiegman. Handb. d. Zool.* ed. 3.

- Auriculacea, Jay, 1850, *Catal.* ed. iv. 263.
A. Adams et Reere, 1850, *Zool. Voy. Samarang*, Moll. 55.
Philippi, 1853, *Handb. d. Conch.* 251.
Poey, 1854, *Memor.* i. 392.
Pfr. 1854, *Synops. Auric.* 146; *Mon. Auric.* p. 10.
Carychiadæ, Leach, 1818, *Cat. MSS.*
Auriculæ, Férussac, 1821, *Prodr.* 98, & t. 33.
Rang, 1829, *Man.* 172.
Potiez et Michaud, 1838, *Gal. Douai*, i. 199.
Limnocoehliides (part.), Latreille, 1824, *Ann. Sc. Nat.* iii. 328.
Berthold in Latr. Nat. Fam. 175.
Auriculadæ, Gray, 1824, *Ann. of Philos.* viii. 107.
Thompson, 1840, *Moll. Irel.* 28.
Auriculides, les, Risso, 1826, *Hist.* iv. 93.
Auriculaceæ, Menke, 1828, *Synops.* 19.
Hinds, 1844, *Voy. Sulph. Zool.* 60.
Auriculoidea, De Crist. et Jan, 1832, *Cat.* 6.
Fitzinger, 1833, *Syst. Verz.* 110.
Auriculidea, Beck, 1837, *Ind.* 101.
Auriculidæ, Gray, 1840, in *Turt. Man.* ed. 2. 220; 1840 et 1842,
Syn. Cont. Brit. Mus. 91; 1847, in *Proc. Zool. Soc.* xv. 179;
1850, in *M. E. Gray's Fig. of Moll. Anim.* iv.
Cantraine, 1841, *Malac. Médit.* 167.
D'Orbigny, 1841, *Moll. Cat.* i. 137.
C. B. Adams, 1849, *Contr. to Conch.* iii. 41.
Mörch, 1852, *Cat. Conch. Yold.* 37.
Auriculata, Sismonda, 1842, *Syn. An. Invert.* 26.
Auriculiadæ, De Kay, 1843, *New York Fauna*, Moll. 57.
Auriculina, Agassiz, 1847, *Nom. Zool. Ind. Univ.*
Auriculæ'ina, Strobel, 1850, *Stud. Malac. Ungh.* 32.
Conovulidæ, Clark, 1850, *Ann. & Mag. N. H.* 2 ser. vi. 444.
Melampidæ, Stimpson, 1851, *Shells of New Engl.* 51.
Ellobiidæ, H. and A. Adams, 1855, *Gen. rec. Moll.* ii. 236.

The family of *Auriculacea* was first founded by Lamarck, 1809, in a very incongruous manner, comprising the genera *Auricula*, *Melanopsis*, *Melania* and *Limnæa*.

Cuvier, in his *Règne An.* 1817, ii. 413, ascribed the genera *Auricula* and *Melampus* to the Pulmonata aquatilia.

Leach, in his inedited Catalogue, 1818 (see J. E. Gray, in *Ann. & Mag. N. H.* xx. 267), mentions a family of *Saccobranchia* under the name of *Carychiadæ*, comprising the genera *Carychium*, *Jaminia* (*Leuconia*) and *Alexia*.

Férussac designates (1821) with the name *Auriculæ* the only family of *Gehydrophila*. His genera are the following: *Carychium*, *Scarabus*, *Auricula*, *Pyramidella*, *Tornatella*, *Pedipes*.

Lamarck, in his *Hist. d. An. s. Vert.* vi. 2 (1822), p. 136, refers

the genus *Auricula* to the second section of his "*Colimacés*," with two tentacles (including the *Conoruli*, which he had formerly separated from it), which almost exactly corresponds with what is now called the family of *Auriculidæ*.

Gray established in 1824 a family of *Pulmonobranchiata* with the name *Auriculadæ*, which was adopted by Thompson (1840).

Blainville gives (1824) the Lamarckian name *Auriculacea* to his second family of *Pulmobranchiata*, containing the genera *Pedipes* (with the subgenera *Tornatella*, *Pedipes*, *Conorulus*), *Auricula*, *Pyramidella*. The name and position of the family are adopted (1842) by G. B. Sowerby, jun.

Latreille's (1825) third family of *Pulmonata*, *Limnocochlides*, comprises the genera *Carychium*, *Scarabus*, *Auricula*, *Conorulus*, *Cassidulus*, *Lymncea*, *Physa*, *Planorbis*, *Ancylus*.

Risso (1826) gives the name of "*les Auriculides*" to a family of *Adelobranchia*, of which the genera are *Auricula*, *Pyramidella*, *Ancylus*.

Menke (1828) was the first who proposed, under the name of *Auriculaceæ*, a family of *Amphibicæ*, perfectly cleared of any heterogeneous genera. This family, the name of which was (1830) changed into *Auriculacea*, is composed of the genera *Scarabus*, *Auricula*, *Carychium*.

Rang (1829) follows Férussac, but ejects the genera of *Plicacea*, and enumerates the genera *Carychium*, *Auricula*, *Pedipes*, *Scarabus*. The same method is adopted (1838) by Potiez and Michaud.

Deshayes (1830) designates with the name of *Auriculacea* the fifth family of *Pulmonobranchiata*. Genera: *Auricula*, *Scarabus*, *Pedipes*.

Lowe (1830) ascribes the genera *Melampus* and *Pedipes* to the family *Plicacea* of Lamarck.

De Cristofori and Jan (1832) give the name of *Auriculoidea* to their unique family of *Gehydrobia*, with the genera *Carychium* and *Auricula*. The same name is used by Fitzinger (1833) for the genera *Carychium* and *Acme*.

Beck (1837) institutes with the name of *Auriculidea* a family of *Gasteropoda*, to which he refers the genera *Acme*, *Polydonta*, *Auricula*, *Carychium*, *Pythia*, *Pedipes*, *Cassidulus*, *Melampus* (subgenera *Conorulus*, *Melampus*, *Lirator*), *Ophicardelus*.

Anton (1839) admits the Blainvillean name for a family of *Gasteropoda*, in which he includes *Scarabus*, *Pyramidella* and *Auricula* (subgenera *Carychium*, *Auricula*, *Cassidula*, *Conorula*).

Swainson (1840) places the genus *Melampus* (which is perfectly congruous with the family of *Auriculidæ*, inasmuch as it comprises the subgenera *Georula*, *Pedipes*, *Scarabus*, *Melampus*, *Rhodostoma*) among the *Turbinae*, a subfamily of *Turbidæ*.

Dr. Gray (1840) first applies the name *Auriculidæ* to a well-characterized family of *Pneumonobranchia inoperculata aquatilia*, in which are enumerated as British genera, *Carychium*, *Acme* and *Conorulus*.

In the *Synopsis of the Contents of the British Museum*, 1840 and 1842, Dr. Gray says, "The family of *Auriculidæ*, case 26, are peculiar from having cylindrical tentacles, like the land-slugs, and their eyes are placed on the inner side of the base of these tentacles. They have a rugged conical muzzle. The mantle is thin, with a thickened edge; they are always provided with an external spiral shell, which has a plaited pillar in all ages; and the animal has the peculiarity of absorbing the septa which separate the cavities of the whorls from one another: even in *Scarabus*, which has these parts only incompletely developed, the true *Auriculæ* have a thickened edge to the mouths of the shell, which is covered with a brown periostraca. The *Scarabus*, like *Ranellæ*, forms half a whorl between each period of rest, the thickened and reflexed part of the lips forming an edge on each side of the shell: the *Sidula* has a sharp internal ridge to the outer lip. *Carychium* is one of the smallest British shell-bearing mollusca; it has a sinuated mouth and a reflexed lip like a *Bulinus*. The *Conoruli*, which are found under stones on the sea-shore and in the mud of salt marshes, have an obconic shell with a narrow linear mouth; and the *Che-lineæ*, which live in clear running streams in South America, have much the habit of the pond snails (*Lymnææ*), from the shells of which they are chiefly to be distinguished by the sharpness of the plaits on the pillar, and by the shell being spotted." (p. 131. 1842, p. 81.) Genera: 1. *Auricula*; 2. *Melampus*; 3. *Sidula*; 4. *Tralia*; 5. *Detracia*; 6. *Pedipes*; 7. *Marmula*; 8. *Oratella*; 9. *Leuconia*; 10. *Scarabus*; 11. *Chilina* (*Ida*); 12. *Carychium*; 13. *Acme*. (Ed. 1842, p. 91.)

In the *Proc. of the Zool. Soc.* 1847, p. 179, the same author comprises in the family of *Auriculidæ* the genera *Auricula*, *Melampus*, *Cassidula*, *Pedipes*, *Marinula*, *Ophicardelus*, *Alexia*, *Leuconia*, *Scarabus*, *Carychium*, *Acmea*; and (1850) in Mrs. Maria Emma Gray's *Fig. Moll. An.* iv. 118, the genera *Auricula*, *Melampus*, *Cassidula*, *Pedipes*, *Ophicardelus*, *Alexia*, *Scarabus*.

Cantraine (1841) designs with the same name the fifth family of *Pulmonata*, with the Mediterranean genera *Carychium*, *Auricula*.

D'Orbigny (1841) enumerates in the same family the genera *Carychium*, *Scarabæus*, *Auricula*.

L. Pfeiffer (1841) adopts the family of *Auriculacea* among the *Gasteropoda cælopnou gymnostoma dicera*, and gives (1853) a more exact description of this family, which he proposes to

divide into two subfamilies, *Melampea* and *Auriculea*, a method very similar to that adopted by the same author in the *Monographia Auriculaceorum*.

Reeve (1842) applies the same name to a family of *Gasteropoda*, comprising the genera *Auricula* (in which he includes *Pedipes*), *Scarabus*, *Chilina*. A. Catlow (1845) follows him.

Sismonda (1842) gives the name of *Auriculata* to a section of *Gasteropoda*, of which only the genus *Auricula* is mentioned.

De Kay (1843) changes the name of the family into *Auriculiadæ*.

Küster (1844) gives an illustrated monograph of *Auriculacea*, containing the genera *Carychium*, *Scarabus*, *Auricula* (sections *Cassidula*, *Conorulus*, *Auricula*, *Pythia*, *Tornatellina*, *Conulus*) and *Jaminia*.

Hinds (1844) uses Menke's name of *Auriculaceæ*.

Agassiz (1847) proposes to change the name of the family into *Auriculina*.

Troschel (1848) places the family of *Auriculacea* in the second series of hermaphrodite *Gasteropoda*.

The same name is used by Jay (1850), and by A. Adams and Reeve, also by Poey (1854), who enumerates the Cuban genera: *Melampus*, *Pedipes*, *Odostomia*.

Strobel (1850) changes the name of the family into *Auriculæ'ina*.

Clark (1850), *Ann. and Mag. N. H.* vi. 444, regards under the name of *Conorulidæ* a family of *Pectinibranchiata*, in which he admits the genera *Conorulus*, *Carychium*, *Acme*, and ? *Otina*, Gray. In his synopsis of the families and genera of the British testaceous *Acephala palliobranchiata* and *lamellibranchiata*, *Gasteropoda* and *Cephalopoda* (1851), l. c. vii. 472, the family is only formed of the genera *Conorulus*, *Pedipes* and *Otina*, and *Acme* and *Carychium* are removed to the *Pyramidellidæ*; and in his 'British Marine Testaceous Mollusca,' 1855, he places *Otina* between *Bullidæ* and *Conorulidæ*.

Stimpson (1851) applies the name of *Melampidæ* to a family, of which the American genera *Melampus* and *Carychium* are enumerated.

Philippi (1853) regards *Auriculacea* as the fourth family of *Pulmonata*, including the following genera: *Scarabus*, *Auricula* (with the sections *Auricula*, *Cassidula*, *Carychium*, *Melampus*, *Pythia*, *Ophicardelus*), *Pedipes*.

H. and A. Adams have published a recent 'Monograph of *Ellobiidæ*,' a family of Pulmoniferous Mollusks.

Among the various genera ascribed to the family of *Auriculidæ* by several authors, the following must be excluded from

the family: *Melanopsis*, *Melania* and *Limnæa* (introduced by Lamarck), *Pyramidella* and *Tornatella* (by Férussac), *Physa*, *Planorbis* and *Ancylus* (by Latreille), *Acme* (by Beck), *Chilina* (by Gray), *Tornatellina*, *Conulus* and *Jaminia* (by Küster).

The remaining genera form a well-circumscribed family, allied on the one hand to *Limnæidæ*, on the other to *Aciculidæ*. From the differences existing in the shells and animals they should be divided into three subfamilies, *Otininæ*, *Melampinæ*, and *Auriculinæ*; to which I formerly thought might be added a fourth, *Proserpininæ*, when the position of the eyes at the inner or outer base of the tentacles shall be perfectly known; but Dr. Gray, on examining the animal, has shown that in the open-air chamber and the form of the teeth, it is more allied to *Cyclostomidæ*, thus forming a distinct family.

Subfam. I. OTININÆ.

Mollusks living on rocks of the sea-shore, corresponding with the animals of *Auriculinæ* and *Melampinæ* in the structure of the external organs and in their lingual teeth. Shell ear-shaped, with the columella not plaited, and the margin of the peristome simple and sharp.

Otininæ, H. and A. Adams, *Gen. rec. Moll.* ii. p. 249.

Otinea, Pfr. *Mon. Auric.* p. 11.

This subfamily has nearly the same relation to *Auriculidæ* as *Ancylinæ* to *Limnæidæ*. The only genus belonging to it is

1. OTINA, Gray.

Shell similar to that of *Sigaretus*, with few whorls, which are rapidly increasing. Mouth wide, rather symmetrical; left margin flattened, sharp, not folded; right margin simple. Animal resembling that of *Pedipes* in its structure and habits.

Otina, Gray, 1847, *Proc. Zool. Soc.* xv. 156.

Clark, 1850, in *Ann. & Mag. N. H.* vi. 448.

Forbes and Hanl. 1851, *Brit. Moll.* iii. 320.

A. Adams, 1851, in *Proc. Zool. Soc.* xix. 225.

Herrmannsen, 1852, *Ind. Gen. Malac. Suppl.* 99.

Gray, 1854, in *Ann. & Mag. N. H.* xiii. 74.

H. and A. Adams, *Gen. rec. Moll.* ii. 249.

Pfr. *Mon. Auric.* p. 11.

Helix, *Velutina*, *Galericum* (part.), *Auct.*

This genus was first indicated by Dr. Gray as a subgenus of *Velutina*; Clark adopted it, with some doubt, among the genera of *Conovulidæ*, which he considers "pectenibranchous." Forbes

and Hanley referred it to *Pyramidellidæ*, describing the animal as having "an armed tongue and jaws; branchial plume single?"; and Dr. Gray (1854) showed that the animal, instead of having gills, respired free air in a closed branchial cavity, and had teeth like other *Pulmonata*.

1. OTINA OTIS.

B.M.

Shell depressed, semioval, rather solid, very slightly striated, covered with a thin periostraca, rather shining, brown, generally eroded when adult; spire minute, slightly mucronate; whorls two and a half, the penultimate one somewhat compressed; aperture nearly horizontal, ovate-oblong; peristome nearly continuous, with the columellar margin liver-coloured. Length 3, breadth nearly $2\frac{1}{2}$ mill.

Helix otis, *Turt. Conch. Dict.* 70.

Velutina otis, *Flem. Brit. Anim.* 324.

Forb. Mal. Mon. 29; *Brit. Mar. Conch.* pl. 153. f. 4.

Alder, Cat. Moll. Northumb. 69.

M. E. Gray, Fig. Moll. Anim. iv. 82. pl. 103. f. 8.

Galericulum ovatum, *Brown, Ill. Conch. Gr. Br.* 23. pl. 19. f. 27, 28.

Galericulum otis, *Brown, Ill. Conch. Gr. Br.* 24.

Otina otis, *Clark in Ann. & Mag. N. H.* vi. 448.

Forb. & Hanl. Brit. Moll. iii. 321. pl. 99. f. 2, 3.

A. Adams in Proc. Zool. Soc. 1851, 225.

H. & A. Adams, Gen. rec. Moll. ii. 249. pl. 83. f. 5.

Pfr. Mon. Auric. 12.

Hab. Coasts of Great Britain.

2. OTINA ZONATA.

Shell semioval, rather solid, sculptured with slight arched wrinkles and irregular spiral striæ, not shining, whitish or flesh-coloured, variously girdled with fuscous or pale reddish-brown bands; spire minute, papillate; whorls two and a half, the last inflated; aperture diagonal, roundish-ovate, pearly shining within; peristome interrupted; right margin straight, regularly arcuate; columellar margin broad, flat, white. Length 10, breadth 8, height $4\frac{1}{4}$ mill.

Velutina zonata, *Gould, Invert. of Massach.* 242. f. 160.

Otina zonata, *A. Adams in Proc. Zool. Soc.* 1851, 225.

Pfr. Mon. Auric. 12.

Hab. United States; Massachusetts, Chelsea Beach.

3. OTINA FUSCA.

Shell semioval, rather solid, obliquely striated, decussated

with extremely minute and closely-set spiral striæ, semiopaque, brown, destitute of a periostraca; spire minute, slightly mucronate; whorls not quite three, the penultimate one inflated, the last semiglobose; aperture diagonal, oblong-rounded, pearly shining within; peristome scarcely interrupted; right margin straight, much curved above; columellar margin dilated, excavated, white. Length 12, breadth 9, height $5\frac{1}{2}$ mill.

Otina fusca, *A. Adams in Proc. Zool. Soc.* 1851, 225.

H. and A. Adams, Gen. rec. Moll. ii. 250.

Pfr. Mon. Auric. 12.

Hab. Benguela.

Subfam. II. MELAMPINÆ.

Amphibious, or living in brackish water near the mouths of rivers. Shell with the peritreme of the aperture acute, straight. Columella plicate; body of the penult whorl and right margin of the peristome toothed or smooth.

Melampea, *L. Pfr. in Zeitschr. f. Mal.* 1853, p. 8; *Malac. Bl.* 1854, p. 146; *Mon. Auric.* p. 13.

Melampinæ, *H. and A. Adams, Gen. rec. Moll.* ii. p. 242.

The following genera may be comprised in this subfamily:—*Melampus*, *Marinula*, *Pedipes*, and *Leuconia*, which for its affinity with *Alexia* is enumerated among the *Auriculinae* in Pfeiffer's 'Monograph.'

2. MELAMPUS, Montfort.

Shell ovate-conoidal or rather ovate, solid; spire rather short; aperture elongated, narrow; columella distinctly plaited; body of the penultimate whorl smooth, or furnished with from one to five folds or teeth; peristome straight; right margin acute, smooth within or furnished with transverse ridges.

Melampus, *Montfort, 1810, Conch. Syst.* ii. 319.

Cuvier, Règne An. ii. 414.

Say in Philad. Journ. ii. 245.

Lowe in Zool. Journ. v. 280.

Beck, Ind. 106.

Jay, Catal. 1839, 59.

Swains. Malac. 344 (subgenus).

Gray in Syn. Br. Mus. 1842, 91, et in *Proc. Zool. Soc.* 1847, 179.

Herrmannsen, Ind. gen. Malac. ii. 27.

C. B. Adams, Contr. to Conch. iii. 41.

A. Adams and Reeve, Voy. Samarang, Moll. 55.

Forbes in Voy. Rattlesnake, App. 361.

Mörch, Cat. Yold. 38.

Melampus, *L. Pfr. in Z. f. M.* 1853, 9; *Malac. Bl.* 1854, 146; *et Mon.* p. 13.

H. and A. Adams, Gen. rec. Moll. ii. 244.

Conovulus, *Lamarck*, 1812, *Extr. d'un Cours.*

Goldf. Handb. d. Zool. 657.

Latreille, Fam. Nat.

Blainv. Malac. 452.

Cuvier, Règne An. ed. 2, *et ed. Voigt*, iii. 111.

Beck, Ind. 106.

Anton, Verzeichn. 48.

Morris, Brit. Foss. 142.

Guérin, Iconogr. Moll. 17.

Récluz in Proc. Z. S. 1845, 122.

Melampa, *Schweigger, Naturgesch.* 739.

Conovula, *Férussac, Prodr.* 104.

Rang, Manuel, 173.

Auricula (part.), *Lam. Hist. An. s. Vert.* vi. 2. &c.

Conovulum, *G. B. Sowerby, Conch. Mon.* ed. 2. 119.

Ophicardelus, *Beck, Ind.* 108.

H. and A. Adams, Gen. rec. Moll. ii. 245.

Tralia, *Gray in Turt. Mon.* 21, *and Syn. Br. Mus.* 1842, 91.

H. and A. Adams, Gen. rec. Moll. ii. 244.

Laimodonta, *Nuttall*.

H. and A. Adams, Gen. rec. Moll. ii. 246.

Pira, Tifata, Signia, and Persa, *H. and A. Adams* (subgenera).

Bullæ, sp., *Linn. Syst.* ed. 10.

Volutæ, sp., *Linn. Syst.* ed. 12.

Bulimi, sp., *Bruguère in Enc. Méth.* ii.

One species of this genus, as well as two genuine *Auriculæ*, were at first ascribed by Linnæus to the genus *Bulla*, and then to the genus *Voluta*. Bruguère transferred all those of Linnæus' *Volutes*, which have no channeled aperture, into his monstrous genus *Bulimus*, out of which various authors at different times have founded new genera. D. de Montfort was the first who founded a good genus under the name of *Melampus*, upon *Bul. coniformis*, Brug., and this was adopted under the same name, but with different extent of application, by the above-quoted authors. Lamarck also had (1812), under the name "*Conorulus*," separated the *Auriculæ* having the right margin straight and acute, which he believed to be fluviatile, from the genuine ones, but (1822) reunited them with the genus *Auricula*. Since that time most authors confounded the species of *Melampus* with *Auricula*, until Beck restored the genus *Melampus*, but in a wider sense, dividing it into the subgenera *Conorulus*, *Melampus*, and *Lirator*. Several species were united with *Auricula myosotis*, Drap., into the genus *Pythia* (neither of Bolten nor Gray),

what twisted, forming an indistinct angle with the peristome, which is simple, straight; right margin scarcely arcuate, slightly sinuate, furnished within with three transverse ridges; columellar margin callous, shining. Length 11, breadth 5 mill.

Melampus commodus, *H. and A. Adams in Proc. Z. S.* 1854, p. 12. n. 34; *Gen. rec. Moll.* ii. p. 243.

Pfr. Syn. Auric. n. 1; *Novit. Conch.* i. p. 23. n. 38. t. 6. f. 20-22; *Mon. Auric.* p. 16.

Hab. New Zealand.

2. MELAMPUS MITRALIS.

Shell imperforate, ovate-oblong, solid, smooth, shining, fulvous with pale bands; spire convexly conic, with the apex rather pointed; suture linear; whorls nine to ten, flat, the upper sculptured with remote radiating furrows; last whorl forming about four-sevenths of the total length; rather gibbous in front; aperture nearly perpendicular, narrow, angulated on both extremities; no parietal plait; columellar plait strong, twisted, forming a kind of prominent tooth at the base of the aperture; peristome simple; right margin sharp, slightly transversely ridged within; columellar margin callous, adnate. Length 11, breadth 6 mill.

Melampus (Tralia) mitralis, *H. and A. Adams in Proc. Z. S.* 1854, p. 13. n. 38.

Pfr. Syn. Auric. n. 2; *Novit. Conch.* i. p. 19. n. 32. t. 6. f. 5, 6; *Mon. Auric.* p. 16.

Tralia mitralis, *H. and A. Adams, Gen. rec. Moll.* ii. p. 244.

Hab. Mogador, Africa.

3. MELAMPUS POEYI.

Shell imperforate, oblong-fusiform, rather solid, slightly striate, shining, chestnut-coloured, for the most part with one to two narrow pale bands; spire elongately conic, pointed; suture very slight, indistinctly bordered, irregular; whorls ten, increasing gradually, the upper flat, the last a little longer than the spire, slightly attenuated at the base; aperture perpendicular, narrowly semiovate, modified by the columellar plait, which is sharp and scarcely ascending, and by a tooth on the labrum, opposite to the columellar plait; peristome simple, rather blunt; right margin slightly sinuated in front, furnished with several obsolete ridges within; columellar margin widely callous. Length 10, greatest breadth 5 mill.

Melampus Poeyi, *Pfr. in Z. f. M.* 1853, p. 126; *Syn. Auric.* n. 8; *Mon. Auric.* p. 17.

H. and A. Adams, Gen. rec. Moll. ii. p. 243.

Hab. Isle of Cuba.

4. MELAMPUS CINGULATUS.

B.M.

Shell imperforate, fusiform, solid, rather smooth, brown, girdled with unequal whitish bands; spire convexly conic, acutely mucronulate; suture simple; whorls ten, the upper rather flat, extremely narrow, the last forming nearly two-thirds of the total length, attenuated in front; aperture scarcely oblique, linear, divided at its base by a single strong, sharp, obliquely ascending columellar plait; peristome simple, sharp; right margin furnished within with six to eight teeth, of which the basal one is the largest and elongate. Length 9, greatest breadth 5 mill.

Auricula cingulata, *Pfr. in Wieg. Arch. f. Nat.* 1840, i. p. 251.

Küst. Auric. p. 40. t. 6. f. 4-6.

Jay, Cat. 1840, p. 264. n. 6141.

Auricula oliva, *D'Orb. Moll. Cub.* i. p. 189. pl. 12. f. 8-10.

Auricula stenostoma, *Küst. olim in Ind.* fasc. 42.

Melampus cingulabris, *C. B. Adams, Contrib. to Conch.* iii. p. 42; ix. p. 186.

Shuttl. Diagn. n. Moll. n. 7. p. 162.

Melampus cingulabris, *H. and A. Adams in Proc. Z. S.* 1854, p. 11.

Poey, Memor. i. p. 394; *Syn. Auric.* n. 4; *Mon. Auric.* p. 17.

Tralia (Tifata) cingulata, *H. and A. Adams, Gen. rec. Moll.* ii. p. 245.

Hab. Cuba, Jamaica, Portorico.

5. MELAMPUS BULLAOIDES.

B.M. ?

"Shell ovate, pale horn-colour, inclining to purplish-brown at the tip, with eleven or twelve flat whorls; these are not divided by any depressed line, but each folded over the other, leaving the edge abrupt, and not turned inwards: the body volution consists of three-fourths of the shell, those at the top not only extremely small, but the four or five last decrease so suddenly that they form a nipple on the shell, like the style on the top of an acorn, and which it much resembles; the apex is more minute than in any shell of its size we ever remember to have seen: the aperture is much contracted; the outer lip extends about half the length of the shell; the pillar lip quite smooth, without any duplicature, but at the base, or lower part of the aperture, the outer lip makes a short revolution, enters the aperture, and forms a strong plication or ridge on the columella, the spiral turn of which may be traced through the shell, although considerably thick and opaque; the sudden flexure of the lip that forms the spiral ridge on the columella forms also a sort of canal or gutter." (*Mont.*) Length $\frac{3}{8}$ in.

Voluta bullaoides, *Mont. Test. Brit. Suppl.* p. 102. pl. 30. f. 4.

Turt. Conch. Dict. p. 254. n. 13.

- Tornatella bullaoides, *Fér. Prodr.* p. 108. n. 7.
 Auricula multivolvis, *Jeffr. in Linn. Trans.* xiii. 1820, p. 516.
 Auricula bullaoides, *Gray in Ann. of Philos.* xv. 1825.
 Melampus bulla, *Lowe in Zool. Journ.* v. p. 293.
Beck, Ind. p. 108. n. 15.
 Detracia bullæoides, *Gray in Turt. Man.* new ed. p. 20.
 Conovulus bullaoides, *Forb. & Hanl. Brit. Moll.* iv. p. 197.
 Melampus bullaoides, *Pfr. Mon. Auric.* p. 18.
Hab. St. Vincent's, West Indies.

A rather doubtful species, nearly allied to *M. cingulatus*, Pfr., which by several authors is supposed to be the same.

§ 2. *Labrum furnished with more or less distant parallel transverse ribs; body of the penultimate whorl bearing a single plait.*

6. MELAMPUS ANGIOSTOMUS.

Shell ovate elongate, smooth, shining, yellow; spire elongate, conic, blunt; aperture narrow; columella two-toothed; labrum strongly bordered and crenate within, interrupted posteriorly. Length 16, breadth 7 mill. (*Desh.*)

- Auricula angistoma, *Desh. in Encycl. Méth.* ii. p. 93. n. 16.
 Auricula angistoma, *Desh. in Guér. Mag.* 1830, pl. 11.

Küst. Auric. p. 23. t. 2. f. 6, 7 (from *Guérin*).

- Auricula angystoma, *Desh. in Lam. Hist.* viii. p. 335. n. 19.
 Conovulus angistomus, *Küst. Auric.* p. v.
 Melampus (Tralia) angistoma, *H. and A. Adams in Proc. Z. S.* 1854, p. 11. n. 25.
 Melampus angistomus, *Pfr. Syn. Auric.* n. 6.
 Tralia (Pria) angistoma, *H. & A. Adams, Gen. rec. Moll.* ii. p. 244.
 Melampus angistomus, *Pfr. Mon. Auric.* p. 19.
Hab. — ?

7. MELAMPUS OBLONGUS.

Shell subrimate, oblong, solid, smooth, fulvous flesh-coloured, marked with obsolete whitish bands and streaks, and with irregular brownish variciform stripes; spire convexly conoidal, with the apex slightly mucronate, generally brown; suture linear, torn on the edge; whorls eight to nine, scarcely convex, the last forming three-fifths of the total length, slightly narrowed near the suture, swollen in front; aperture perpendicular, narrow, modified by a deeply placed nodiform parietal callus, and an oblique, compressed columellar plait; peristome bordered with brown; right margin sharp, furnished within with a white callus

bearing slight plaits; columellar margin thickened, adnate. Length $11\frac{1}{2}$, breadth 6 mill.

β. Smaller, more slender, chestnut-coloured, with three white bands.

Melampus oblongus, *Pfr. in Proc. Zool. Soc.* 1856.

Hab. Island of Bermuda.

This shell resembles *M. cingulatus*, but is evidently more allied to *M. angiosomus*, *Desh.*, from which it differs by its size, by the number of its whorls, and by the right margin not being denticulate.

8. MELAMPUS GUNDLACHI.

Shell subperforate, elliptical ovate, solid, rather smooth, uniformly greyish-white, or variously marked with brown bands; spire regularly conic, pointed; suture linear; whorls ten to eleven, flat, the last forming about three-fourths of the total length, obsoletely angled above, contracted in front; aperture perpendicular, elongately semioval, modified by two nearly equal plaits; one strong, deeply entering, thickened externally, below the middle of the penultimate whorl, the other columellar, obliquely descending to the margin; peristome sharp; right margin arched, sinuated, terminating in a broad smooth space, furnished within with from fifteen to twenty white transverse ridges; columellar margin much thickened, turgid, white. Length 16, greatest breadth 10 mill.

Melampus Gundlachi, *Pfr. in Z. f. M.* 1853, p. 126; *Syn. Auric.* n. 7; *Mon. Auric.* p. 20.

H. and A. Adams, Gen. rec. Moll. ii. p. 243.

Hab. Cuba and Bermuda.

9. MELAMPUS BIPLICATUS.

Shell conical, turbinate, chestnut-brownish; spire short, conic; aperture elongated, dilated in front; columella two-folded; labrum sharp, obsoletely striated within; umbilicus funnel-shaped, partly covered. Length 22, breadth 12 mill. (*Desh.*)

Auricula biplicata, *Desh. in Encycl. Méth.* ii. p. 91. n. 11.

Conovulus biplicatus, *Beck, Ind.* p. 106. n. 1.

Melampus biplicatus, *Pfr. Mon. Auric.* p. 21.

Hab. America (*Beck*).

10. MELAMPUS FLAVUS.

B.M.

Shell imperforate, obconic, smooth, chestnut-coloured, with three narrow pale bands; spire short, convexly conoidal, mucro-

nate; suture linear; whorls nine to ten, the upper ones rather flat, the last forming nearly three-fourths of the total length, furnished with an arched ridge at its base; aperture almost perpendicular, narrow, angled at base; one parietal plait situated deeply; columellar plait strong, rather vertical, produced at the base; peristome straight, acute; right margin with a brownish internal lip, then whitish-callous, and furnished with about ten short transverse ridges; columellar margin callous, dilated. Length 12, greatest breadth $8\frac{2}{3}$ mill.

Lister, Hist. t. 834. f. 60.

Favanne, Conch. t. 65. f. H. 1.

Auricula Midæ parva, torosa, flavida, *Martini, Conch.* ii. p. 119, 126. t. 43. f. 445.

Voluta, no. 106, *Schröt. Einleit.* i. p. 272.

Voluta flava, Gmel. Syst. p. 3436. n. s.

Dillw. Cat. i. p. 506. n. 17.

Voluta flammea γ, *Gmel. Syst.* p. 3435 (from Lister's figure).

Bulimus monile, Brug. in Encycl. Méth. i. p. 338. n. 70.

Melampa monile, Schweigg. Handb. p. 739.

Conovulus monile, Goldf. Handb. p. 657.

Conovulus flavus, Anton, Verzeichn. p. 48. n. 1776.

Auricula monile, Fér. Prodr. p. 105. n. 22.

Lam. Hist. vi. 2. p. 141. n. 14; ed. *Desh.* viii. p. 333.

Küst. Auric. p. 30. t. 4. f. 7-9.

Auricula flava, Desh. in Lam. Hist. viii. p. 333.

Jay, Cat. 1850, p. 264. n. 6150.

Petit in Journ. Conch. ii. 1851, p. 427.

Auricula coniformis, D'Orbigny, Moll. Cub. t. 10. f. 1-3.

Melampus monile, Lowe in Zool. Journ. v. p. 292.

Beck, Ind. p. 108. n. 14.

Melampus minutus, C. Beck, Ind. p. 107.

Melampus flavus, C. B. Adams, Contr. to Conch. iii. p. 42; ix. p. 186.

H. and A. Adams in Proc. Z. S. 1854, p. 9. n. 4; *Gen. rec.*

Moll. ii. p. 243.

Poey, Memor. i. p. 394.

Pfr. Syn. Auric. n. 8; *Mon. Auric.* p. 21.

Melampus torosa, Mörch, Cat. Yold. p. 38. n. 779.

Melampus monilis, Shuttl. Diagn. n. Moll. n. 7. p. 162.

β. Larger, uniformly fulvous.—*Martini, Conch.* ii. t. 43. f. 444.

Hab. Cuba, Jamaica, Guadaloupe, Portorico.

11. MELAMPUS LIBERIANUS.

Shell imperforate, elongately obconic, rather solid, smooth, slightly shining, greenish-fuscous, marked with unequal pale bands; spire short, conoidal, mucronulate; whorls six to seven, the

upper ones flat, eroded, the last forming about three-fourths of the total length, slightly angled near the suture, spirally striated above and in front, attenuated downwards, and rather compressed near the umbilical region; aperture elongately semi-ovate, narrower in the middle, rather rounded in front, fuscous within; one tubercle-shaped parietal plait; columellar plait scarcely prominent, twisted, nearly vertical; peristome acute; right margin somewhat inflexed in the middle, furnished within with close-set livid transverse ridges, several of which are longer; columellar margin short, callous, appressed. Length 13, breadth 8 mill.

Melampus Liberianus, *H. and A. Adams in Proc. Z. S.* 1854, p. 12. n. 37; *Gen. rec. Moll.* ii. p. 243.

Pfr. Syn. Auric. n. 9; *Novit. Conch.* i. p. 21. n. 35. t. 6. f. 13, 14; *Mon. Auric.* p. 23.

Hab. Liberia, West Africa (*Dr. Parkins*).

12. MELAMPUS OLIVULA.

Shell rather imperforate, obovate, rather thin, smooth, greenish-grey, with indistinct whitish bands and streaks; spire short, conoidal, mucronate; suture linear; whorls eight, exceedingly narrow, flat, the last forming five-sixths of the total length, convex above, then somewhat angular, gradually lessened towards the base; aperture scarcely oblique, oblong, rounded in front; one minute parietal plait below the middle; columellar plait small, oblique; peristome acute; right margin furnished within with about twelve white transverse ridges; columellar margin callous, nearly affixed. Length 11, breadth $7\frac{1}{2}$ mill.

Auricula olivula, *Moric. in Mém. Genève*, viii. (?).

D'Orbigny, Synops. p. 23.

Küst. Auric. p. 33. t. 3. f. 11-13.

Melampus olivula, *Beck, Ind.* p. 107. n. 11.

H. and A. Adams in Proc. Z. S. 1854, p. 11. n. 17.

Pfr. Syn. Auric. n. 10; *Mon. Auric.* p. 23.

Tralia olivula, *H. and A. Adams, Gen. rec. Moll.* ii. p. 244.

Hab. Bahia, Brazil and Guayaquil, Columbia (*D'Orbigny*).

13. MELAMPUS PARVULUS.

Shell imperforate, ventricose ovate, rather thin, striated; whitish, covered with a greenish-black periostraca; spire short, convexly conoidal, pointed; suture impressed, irregular; whorls six to seven, rather flat, somewhat imbricate, the last forming two-thirds of the total length, inflated, gradually attenuated towards the base; aperture oblique, narrow, acuminate oblong; one

middle-sized, rather compressed parietal plait below the middle; columellar plait stronger, obliquely produced to the margin; peristome thin; right margin sharp, slightly arched, furnished within with four to five distant whitish ridges; columellar margin dilated, callous, shining, brownish orange-coloured. Length 10; breadth 6 mill.

Melampus parvulus, *Nuttall, MSS.*

Pfr. Syn. Auric. n. 11; Mon. Auric. p. 24.

H. and A. Adams, Gen. rec. Moll. ii. p. 243.

Hab. Isle of Oahu.

14. MELAMPUS ADAMSIANUS.

Shell subrimate, ovate-oblong, rather solid, smooth, blackish-green; spire convexly conical, pointed; suture linear; whorls nine, flat, the upper ones somewhat plaited, the last forming two-thirds of the total length, indistinctly angled above, marked near the suture with one larger and several narrow pale bands, irregularly sculptured with striæ of growth, rounded in front; aperture nearly perpendicular, narrowly semiovate; one middle-sized, compressed, transverse parietal plait; columellar plait oblique, produced outwards; peristome straight, bordered with white; right margin sinuate above, furnished within with six to seven short white ridges; columellar margin callous, slightly dilated. Length 10, breadth 5 mill.

Melampus Adamsianus, *Pfr. in Proc. Z. S. 1854, p. 121; Syn.*

Auric. n. 12; Novit. Conch. i. p. 18. n. 29. t. 5. f. 17-19; Mon.

Auric. p. 24.

Tralia (Pira) Adamsiana, H. & A. Adams, Gen. rec. Moll. ii. p. 244.

Hab. New Zealand.

15. MELAMPUS ZEALANDICUS.

Shell rimate, conoidally ovate, rather solid, irregularly striated, slightly shining, horn-coloured brownish; spire conoidal, acutely mucronate; suture linear; whorls nine, flat, the last forming about two-thirds of the total length, rather swollen above, somewhat lessened towards the base, with a swollen tubercle; aperture perpendicular, narrowly semiovate, rounded in front; one middle-sized, rather transverse parietal plait; columellar plait obliquely produced to the margin; peristome acute, bordered with brown; right margin furnished within with a white callus, which sends off eight to nine short ridges; columellar margin slightly thickened. Length $8\frac{1}{2}$, breadth 5 mill.

Melampus Zealandicus, H. and A. Adams in Proc. Z. S. 1854, p. 12. n. 23; Gen. rec. Moll. ii. p. 243.

Melampus Zealandicus, *Pfr. Syn. Auric.* n. 13; *Novit. Conch.* i. p. 20. n. 33. t. 6. f. 7-9; *Mon. Auric.* p. 25.

Hab. New Zealand.

16. MELAMPUS? JANMEI.

Shell conoidal, smooth, horn-coloured yellowish, slightly striated longitudinally; spire short, obtuse, often eroded; aperture elongate, extremely narrow; columella white at its base, two-plaited; peristome thin, sharp, toothed and furrowed within. Length 3-4 mill. (*Mittre*).

Auricula Janmei, *Mittre in Revue Zool.* 1841, p. 67.

Melampus? Janmei, *Pfr. Syn. Auric.* n. 14; *Mon. Auric.* p. 25.

Hab. Near Hampton, Virginia.

17. MELAMPUS GLOBULUS.

B.M.

Shell imperforate, elliptical, ventricose, thin, minutely striated, shining fulvous, with narrow chestnut-coloured bands; spire conoidal, minutely mucronulate; suture linear; whorls ten, flat, narrow, rather equal, the last forming two-thirds of the total length, inflated, rounded at its base; aperture perpendicular, extremely narrow, angled and channeled at base; body of the penultimate whorl bearing a single, knot-shaped plait, which is situated deeply, and sometimes obsolete; columellar plait large, lamelliform, white, arcuately produced to the base; peristome simple, straight; right margin sharp, furnished within with deeply placed thin transverse plaits. Length 10, greatest breadth 6 mill.

Auricula globulus, *Fér. MSS.*

D'Orb. Synops. p. 23. n. 4; *Voy. Amér.* p. 327.

Melampus margarita, *Beck, Ind.* p. 107. n. 10?

Melampus (*Tralia*) *globulus*, *H. & A. Adams in Proc. Z. S.* 1854, p. 11. n. 28.

Pfr. Syn. Auric. n. 5; *Novit. Conch.* i. p. 23. t. 6. f. 23-25;

Mon. Auric. p. 26.

Tralia (*Tifata*) *globulus*, *H. & A. Adams, Gen. rec. Moll.* ii. p. 245.

Hab. Guayaquil, Columbia (*D'Orbigny*); Isle of Tumaco, W. Columbia (*H. Cuming*).

§ 3. *Labrum furnished with more or less distant parallel transverse ribs; body of the penultimate whorl bearing two plaits.*

MELAMPUS, De Montf.

18. MELAMPUS CUMINGIANUS.

Shell unequally biconical, smooth, shining, chestnut-coloured

or fulvous; spire regularly conic, pointed; suture linear; whorls ten to eleven, flat, the last forming two-thirds of the total length, having at its upper part an obtuse yellow keel, regularly attenuated towards the base; aperture nearly perpendicular, equally narrow, slightly channeled anteriorly; parietal plaits two, deep, approximate, separated by a deep sinus from the columellar plait, which is callous and produced; peristome simple; right margin very slightly arched, fulvous, bearing within a white callus, and rather close-set transverse ridges. Length 17, greatest breadth 8 mill.

Conovulus Cumingianus, Récluz in *Proc. Z. S.* 1845, p. 122.

Conovulus elongatus, Petit in *Guér. Mag. Moll.* pl. 138.

Melampus (Tralia) elongatus, H. and A. Adams in *Proc. Z. S.* 1854, p. 11. n. 24.

Melampus Cumingianus, Pfr. *Syn. Auric.* n. 15; *Mon. Auric.* p. 27.

Tralia (Pira) Cumingiana, H. and H. Adams, *Gen. rec. Moll.* ii. p. 244.

Hab. Isle of Negros, Philippines (*H. Cuming*).

19. MELAMPUS SPIRALIS.

Shell subrimate, biconical, rather solid, slightly striated and shining, white; spire conoidal, acutely mucronate; suture linear; whorls ten, the upper ones flat, distinctly striated spirally, the last forming nearly three-fourths of the total length, marked with very indistinct spiral striæ, excavated near the suture, then obtusely angled, regularly attenuated towards the base, which is compressed; aperture nearly perpendicular, oblong, rounded in front; parietal plaits two, the upper one lamelliform, entering, the other immediately below, obsolete; columellar plait high, rather horizontally projecting outwards; peristome acute; right margin angulated above, bearing within seven to eight transverse ridges; columellar margin rather dilated, somewhat spreading. Length 16, greatest breadth 9 mill.

Melampus spiralis, Pfr. in *Proc. Z. S.* 1854, p. 122; *Syn. Auric.* n. 16; *Mon. Auric.* p. 27.

H. and A. Adams, *Gen. rec. Moll.* ii. p. 243.

Hab. —?

20. MELAMPUS COFFEA.

B.M.

Shell subrimate, obconic, solid, smooth, or marked with irregular striæ of growth, rather shining, greyish-green, for the most part with two to three pale bands; spire short, conoidal; apex submucronate, usually black; suture impressed, irregular; whorls nine, scarcely convex, the last forming nearly five-sixths of the total length, indistinctly angled above, then gradually

attenuated towards the base, which is somewhat compressed; aperture scarcely oblique, elongately semioval, brown within; parietal plaits two, the upper one transverse, the other smaller; columellar plait twisted towards the outer margin; peristome acute, with a broad smooth border; right margin furnished with fourteen to sixteen white entering ridges; columellar margin callous, reflexed, diffused towards the upper part, brownish-violaceous.

Bulla coffea, *Linn. Syst.* ed. 10. p. 729. n. 348.

Voluta coffea, *Linn. Syst.* ed. 12. p. 1187. n. 397.

Schröt. Einl. i. p. 200. n. vi.

Gmel. Syst. p. 3438. n. 15.

Dillw. Cat. i. p. 505. n. 15.

Martini, Conch. ii. p. 119. t. 43. f. 445?

Voluta minuta, *Gmel.* p. 3436. n. 6 (part.).

Dillw. Descr. Cat. i. p. 506. n. 16.

Ellobium Barbadosense, *Bolt. Mus.* p. 106. n. 1353; new ed. p. 74. n. 1326?

Bulinus coniformis, *Brug. Encycl. Méth.* i. p. 339. n. 72.

Melampus coniformis, *Montf. Conch. Syst.* ii. p. 318.

Lowe in Zool. Journ. v. p. 292.

C. B. Adams, Contrib. to Conch. no. 3. p. 42, no. 9. p. 186.

Shuttl. Diagn. n. 7. p. 161.

Melampus fusca, *Mörch, Cat. Yold.* p. 38. n. 778? and

Melampus coffea, *Mörch, Yold.* p. 38. n. 780.

Pfr. Syn. Auric. n. 17; *Mon. Auric.* p. 28.

Melampus coffeus, *H. and A. Adams in Proc. Z. S.* 1854, p. 9. n. 1; *Gen. rec. Moll.* ii. 243. pl. 32. f. 7, 7a.

Poey, Memor. i. p. 394.

Tornatelle coniforme, *Blainv. in Dict. Sc. Nat. Pl. Malac.* 54. f. 4.

Auricula coniformis, *Fér. Prodr.* p. 105. n. 23.

Lam. Hist. vi. 2. p. 141. n. 12; ed. *Desh.* viii. p. 332.

Pot. et Mich. Gal. Douai, i. p. 202.

Reeve, Conch. Syst. ii. t. 187. f. 7.

Sow. Conch. Man. p. 77. f. 298?

Küst. Auric. p. 31. t. 4. f. 14-17.

Petit in Journ. Conch. ii. 1851, p. 427.

Auricula ovula, *D'Orb. Moll. Cub.* pl. 13. f. 4-7.

Conovulus coniformis, *Lam. in Encycl. Méth.* t. 459. f. 2.

Anton, Verz. p. 48. n. 1775.

Woodw. Man. Moll. t. 12. f. 37.

Conovulus coffeus, *Beck, Ind.* p. 106. n. 2.

Conovulus coffea, *Gray in Turt. Man.* new ed. p. 20.

β. Shell subfusiform, with the spire rather elongate, forming one-third of the total length.

γ. With no, or a very indistinct, second parietal plait.

δ. Smaller, blackish-brown; last whorl more distinctly angulated above. Length $13\frac{1}{2}$, breadth 9 mill.

Hab. West Indies, Cuba, Jamaica, Portorico, Guadaloupe; Labrador, Mexico, Cayenne.

21. MELAMPUS OBLIQUUS.

Shell obconic, reddish-brown, rather thick; spire very slightly elevated; whorls eight to nine, wrinkled across; labium with two very distinct teeth, and an intermediate and equidistant slight obtuse prominence; inferior tooth very oblique, terminating at the base; labrum with about three teeth or striæ, which terminate on the margin; base of the aperture a little contracted by the basal tooth. Length more than $\frac{7}{10}$ inch. (*Say.*)

Melampus obliquus, *Say in Philad. Journ.* ii. p. 377.

Beck, Ind. p. 107. n. 8.

Pfr. Syn. Auric. n. 18; *Mon. Auric.* p. 30.

Hab. South Carolina.

22. MELAMPUS CASTANEUS.

B.M.

Shell subrimate, oblong-ovate, solid, very indistinctly striated, slightly shining, dark chestnut-coloured, sometimes with a pale band near the base; spire short, conoidal, slightly mucronate; suture impressed; whorls seven, the upper ones narrow, rather flattened, the last forming nearly four-fifths of the total length, gradually attenuated towards the base; aperture almost perpendicular, narrow, scarcely dilated in front; parietal plaits two, below the middle, the upper one stronger; columellar plait rather oblique; peristome simple, sharp; right margin slightly arcuate, furnished within with a deeply situated whitish callus, which sends off seven transverse ridges; columellar margin rather thickened, somewhat spreading. Length 15, greatest breadth $9\frac{2}{3}$ mill.

Voluta castanea, *Mühlfeld in Mag. Ges. Nat. Fr. Berl.* viii. 1818, p. 4. t. 1. f. 2.

Conovulus fuscus, *Philippi in lit.*

Conovulus leucodon, *A. Adams in Voy. Samarang, Moll. Introd.* p. 5.

Auricula fusca, *Küst. Auric.* p. 38. t. 5. f. 18-20.

Auricula castanea, *Phil. in Zeitschr. f. Moll.* 1851, p. 54.

Melampus lugubris, *Beck, Ind.* p. 106. n. 2?

Melampus leucodon, "*Beck*," *A. Adams and Reere, Voy. Samarang, Moll.* p. 55. pl. 14. f. 17.

Melampus fuscus, *M. E. Gray, Fig. Moll. Anim.* pl. 304. f. 1 (ex *Soul. Voy. Bonite*, pl. 29. f. 24-26).

Melampus fuscus, *H. and A. Adams in Proc. Z. S.* 1854, p. 9. n. 3.

Melampus castaneus, *Pfr. Syn. Auric.* n. 19; *Mon. Auric.* p. 30.

H. and A. Adams, Gen. rec. Moll. ii. p. 243.

Hab. Sandwich Islands.

23. MELAMPUS CEYLONICUS.

Shell ovate, obtusely angulated above, smooth, fuscous-greenish; girdled with narrow white or greyish bands; whorls eight to nine, rather flat; spire conical, somewhat depressed, with the apex blackish; aperture three-plaited; upper plait white, rather thick, lamelliform, the second small, the third circular; labrum acute, elongately and deeply furrowed within, with the border brown, smooth. Length 15, breadth 10 mill. (*Petit.*)

Auricula Ceylonica, *Petit in Proc. Z. S.* 1842, p. 202.

Melampus Ceylonicus, *Pfr. Syn. Auric.* n. 20; *Mon. Auric.* p. 31.

Hab. Ceylon.

24. MELAMPUS PHILIPPII.

Shell subrimate, ovate, rather solid, almost smooth, grooved irregularly with striæ of growth, slightly shining, greenish-fuscous, with three white bands; spire short, conoidal, finely mucronate; suture slightly impressed; whorls nine, flat, the upper ones spirally striated, the last forming three-fourths of the total length, obtusely angulated above, attenuated and rounded at base; aperture scarcely oblique, oblong, somewhat dilated in front; parietal plaits two, compressed, entering, the upper one deeply placed, the other parallel with it; columellar plait oblique, produced to the margin, forming an angle with the base of the aperture; peristome simple, obtuse; right margin bordered with fuscous, bearing within on a callous ground seven white plaits, which are dentiform anteriorly; columellar margin shining, brownish orange-coloured, vaultedly reflexed, subappressed. Length 15, greatest breadth 9 mill.

Auricula Philippii, *Küst. Auric.* p. 50. t. 7. f. 23-25.

Melampus Philippii, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 10. n. 9; *Gen. rec. Moll.* ii. p. 243.

Pfr. Syn. Auric. n. 21; *Mon. Auric.* p. 31.

Hab. Otaheite.

25. MELAMPUS TABOGENSIS.

Shell oblong-ovate, solid, smooth, grooved irregularly with striæ of growth, slightly shining, uniformly blackish chestnut-coloured; spire short, convexly conoidal, slightly mucronate; suture linear, somewhat irregular; whorls nine to ten, rather flat,

the last forming a little more than two-thirds of the total length, indistinctly angled above, gradually attenuated towards the base; aperture nearly perpendicular, oblong, somewhat dilated in front; parietal plaits two, approximate, the upper one entering; columellar margin obliquely produced to the margin; peristome simple; right margin blunt, bordered with fuscous, furnished within with a whitish callus bearing transverse ridges; columellar plait callous, vaulted and appressed. Length 13, greatest breadth 8 mill.

Auricula Tabogensis, C. B. Adams in *Ann. Lyc. New York*, 1852, v. p. 435, 542.

Melampus Tabogensis, H. and A. Adams in *Proc. Z. S.* 1854, p. 9. n. 5; *Gen. rec. Moll.* ii. p. 243.

Pfr. Syn. Auric. n. 22; *Mon. Auric.* p. 32.

Hab. Panama and Taboga.

26. MELAMPUS KÜSTERI.

Shell conoidally ovate, rather thin, slightly striated and shining, flesh-coloured, yellow, with broad unequal brown bands; spire convexly conic, pointed; suture linear; whorls nine, the upper ones flat, the last forming nearly three-fourths of the total length, attenuated at base; aperture perpendicular, narrowly semielliptical; parietal plaits two, the upper dentiform, the other rather duplicate; columellar plait small, rather triangular; peristome acute; right margin thickened, behind the spotted border, by a longitudinal callus bearing six to seven unequal transverse ridges; columellar margin dilated, affixed. Length 13, greatest breadth 8 mill.

Auricula Küsteri, Krauss in *Küst. Auric.* p. 34. t. 4. f. 10, 11.

Krauss, Südaf. Moll. p. 81.

Auricula monile, Reeve, *Conch. Syst.* ii. pl. 187. f. 8.

Melampus (Tralia) Küsteri, H. and A. Adams in *Proc. Zool. Soc.* 1854, p. 11. n. 22.

Melampus Küsteri, *Pfr. Syn. Auric.* n. 23; *Mon. Auric.* p. 33.

Tralia (Pira) Küsteri, H. and A. Adams, *Gen. rec. Moll.* ii. p. 244.

Hab. Natal, South Africa.

27. MELAMPUS REDFIELDI.

Shell subrimate, ovate, rather solid, slightly striate and shining, whitish, with various, often interrupted brown bands; spire short, convexly conoidal, pointed; suture scarcely impressed; whorls nine to ten, rather flat, the last forming nearly three-fourths of the total length, indistinctly angled above, attenuated at base; aperture scarcely oblique, oblong, somewhat dilated above the base; parietal plaits two, the upper one larger, trans-

verse, the other approximate, tooth-shaped; columellar plait acute, continued arcuately into the basal margin; peristome simple; right margin somewhat sinuated above, then almost rectilinear, furnished within with a deeply situated row of short, close-set small ridges; columellar margin callous, white, rather appressed. Length 12, greatest breadth 7 mill.

Melampus Redfieldi, *Pfr. in Malak. Bl.* 1854, p. 112; *Syn. Auric.* n. 24; *Mon. Auric.* p. 33.

H. and A. Adams, Gen. rec. Moll. ii. p. 243.

Hab. Isle of Bermuda (*Redfield*).

28. MELAMPUS HEPATICUS.

Shell oblong-ovate, smooth, brownish-rufous, pale; spire pointed, conic, occupying nearly one-third of the total length; last whorl not angulated above; aperture linear, broader at base; labrum acute, thickened within with a longitudinal callus bearing five to six small teeth; columella furnished with two small teeth at its base, and with a third obsolete. Length $5\frac{5}{8}$, breadth $3\frac{1}{2}$ lines (*Phil.*).

Auricula hepatica, *Philippi in Zeitschr. f. Malak.* 1851, p. 54.

Melampus hepaticus, *Pfr. Syn. Auric.* n. 25; *Mon. Auric.* p. 34.

Hab. Liew Kiew (*Cecille*).

“Shape like *A. nitens*, Lam., aperture almost exactly like that of *A. castanea*, Mtf., but the middle tooth at the base of the columella is indistinct.”

29. MELAMPUS UMLAASIANUS.

B.M.

Shell imperforate, conoidally ovate, rather solid, smooth, shining, yellow, marked with five brown bands, several of which are sometimes confluent; spire concavely conoidal, mucronate; suture slightly impressed; whorls eight to nine, the upper ones rather flat, the last forming about three-fourths of the total length, more convex above, then angulated obsoletely, much attenuated towards the base; aperture nearly perpendicular, narrow, scarcely broader in front; parietal plaits two, placed deeply; columella twisted, furnished with a stronger plait, which is produced to the left margin; peristome simple, sharp; right margin bearing within a white longitudinal callus, which sends off six to eight transverse ridges; columellar margin rather dilated, adnate. Length 11, greatest breadth $6\frac{1}{2}$ mill.

Auricula Umlaasiana, *Krauss in Küst. Auric.* p. 43. t. 6. f. 16–20.

Krauss, Südafr. Moll. p. 82.

Melampus Umlaasianus, *H. and A. Adams in Proc. Z. S.* 1854, p. 9. n. 2; *Gen. rec. Moll.* ii. p. 243.

Pfr. Syn. Auric. n. 26; *Mon. Auric.* p. 34.

Hab. Mouth of the river Umlaas, Natal.

30. MELAMPUS PULCHELLUS.

Shell imperforate, ovate fusiform, rather solid, almost smooth, yellowish, elegantly painted with blackish-brown bands and waving streaks; spire convexly conoidal, with the apex mucronate; suture linear; whorls six to seven, rather flat, marked with close-set impressed points below the suture, the last forming about two-thirds of the total length, indistinctly angled above the middle, attenuated at base; aperture vertical, narrow; parietal plaits two, approximate, nodiform; columellar plait strong, oblique, reaching to the base; peristome thin; right margin sharp, bearing within a whitish callus, which sends off seven to eight transverse ridges; columellar margin short, adnate. Length 8, breadth 5 mill.

Auricula pulchella, *Petit in Proc. Z. S.* 1842, p. 202.

Melampus (*Tralia*) *pulchellus*, *H. and A. Adams in Proc. Z. S.* 1854, p. 11. n. 29.

Tralia (*Tifata*) *pulchella*, *H. and A. Adams, Gen. rec. Moll.* ii. p. 245.

Melampus pulchellus, *Pfr. Syn. Auric.* n. 27; *Mon. Auric.* p. 35.

Hab. S. Nicolas, Isle of Zebu, Philippines.

31. MELAMPUS FLORIDANUS.

Shell imperforate, ventricosely fusiform, thin, rather smooth, greyish-fulvous, with various chestnut-coloured bands; spire regularly conic, pointed; suture linear; whorls ten, flat, the upper ones striated radiatingly, the last forming three-fifths of the total length, obsoletely angled above, much attenuated towards the base; aperture nearly perpendicular, narrow, angulated at both extremities; parietal plaits two, small, approximate; columellar plait strong, obliquely produced to the base; peristome sharp, right margin furnished within with several rather equal white transverse ridges; columellar margin short, callous. Length $7\frac{1}{2}$, breadth $4\frac{1}{3}$ mill.

Auricula Floridana, *Shuttleworth, MSS.*

Auricula Rugeli, *Charpentier, MSS.*

Melampus (*Tralia*) *Floridianus*, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 11. n. 21.

Tralia (*Tifata*) *Floridana*, *H. and A. Adams, Gen. rec. Moll.* ii. p. 245.

Melampus Floridianus, *Pfr. Syn. Auric.* n. 28; *Mon. Auric.* p. 35.

Hab. Florida.

32. MELAMPUS TRITICEUS.

Shell oblong-ovate, acuminate, shining, transversely substriated, fulvous; spire conical, whorls seven, flat, narrow; aperture oblong; peristome acute, with the right margin pale, slightly ribbed within; columella three-plaited, reddish-brown at base. Length $3\frac{1}{2}$, breadth 2 lines (*Philippi*).

Auricula triticea, *Philippi*, *MSS.*

Küst. Auric. p. 49. t. 7. f. 20-22.

Cassidula (*Siona*) *triticea*, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 32. n. 16.

Cassidula (*Sarnia*) *triticea*, *H. and A. Adams, Gen. rec. Moll.* ii. p. 239.

Melampus triticeus, *Pfr. Syn. Auric.* n. 29; *Mon. Auric.* p. 36.

Hab. China?

§ 4. *Labrum furnished with more or less distant parallel transverse ribs; body of the penultimate whorl bearing three plaits.*

33. MELAMPUS LUTEUS.

B.M.

Shell imperforate, ovate-conoidal, solid, rather smooth, uniformly yellowish; spire conoidal, pointed; suture scarcely impressed; whorls ten to eleven, the upper ones flat, the last forming more than two-thirds of the total length, very indistinctly angulated above, attenuated in front; aperture vertical, narrow; parietal plaits three, deeply placed, tooth-shaped, the middle one larger; columellar plait rather horizontal; peristome acute, with the margins not united; right margin thickened within by a white callus, bearing nine to ten transverse ridges; columellar margin slightly thickened, adnate. Length 18, greatest breadth $10\frac{1}{2}$ mill.

Auricula lutea, *Quoy & Gaim. Voy. Astrol.* ii. 163. pl. 18. f. 25-27.

Desh. in Lam. Hist. viii. p. 338. n. 27.

Küst. Auric. p. 39. t. 6. f. 1-3.

Reeve, Conch. Syst. ii. pl. 187. f. 11.

Mouss. Jav. Moll. p. 47. t. 5.

Melampus luteus, *Beck, Ind.* p. 106. n. 1.

Mörch, Cat. Yold. p. 38. n. 782.

H. and A. Adams in Proc. Zool. Soc. 1854, p. 10. n. 14;

Gen. rec. Moll. ii. p. 243.

Pfr. Syn. Auric. n. 30; *Mon. Auric.* p. 36.

M. E. Gray, Fig. Moll. An. pl. 306. f. 5.

Conovulus Columbiensis, *Mühlf. MSS.*

Conovulus luteus, *Anton, Verzeichn.* p. 48. n. 1772.

β. Larger, spire more produced. Length 21, breadth 12 mill.
Auricula lutea β, *Mouss. l. c. t. 5. f. 5.*

γ. ? With the upper parietal plaits indistinct.

Melampus pallescens, Sow. in *Beech. Voy.* p. 146. pl. 38. f. 28?

H. and A. Adams in *Proc. Zool. Soc.* 1854, p. 10. n. 8 ?

Auricula pallescens, *Küst. Auric.* p. 51. t. 7. f. 11?

Hab. Vanikoro and Guam (*Quoy*); Lord Hood's Island (*Cuming*); Nusa Baron, Java (*Mouss.*); Tumaco, Columbia (*Anton*). Var. β. Philippine Islands and Java.

34. MELAMPUS ACROMELAS.

Shell subperforate, ovate, somewhat elliptical, rather solid, irregularly striated, flesh-coloured greyish, with four brown bands, which are more or less distinct; spire convexly conoidal, with the apex extremely pointed, blackish; suture slight, somewhat irregular; whorls eight, nearly flat, the upper ones scarcely to be distinguished, the last forming about four-fifths of the total length, slightly angulated above, attenuated towards its base; aperture nearly perpendicular, narrow, elongate and very acuminate posteriorly; parietal teeth three, the first and third minute, the second larger, rather transverse; columellar plait middle-sized, descending obliquely to the margin; peristome simple, straight; right margin bordered with brown, bearing within numerous thin, elongate, white transverse plaits; columellar margin callous, rather dilated, nearly adnate. Length $11\frac{2}{3}$, greatest breadth 7 mill.

Auricula (Conovulus) *acromelas*, *Troschel* in *Archiv f. Naturgesch.* 1852, i. p. 197. t. 6. f. 2.

Melampus acromelas, *Pfr. Syn. Auric.* n. 31; *Mon. Auric.* p. 37. 197.

H. and A. Adams, *Gen. rec. Moll.* ii. p. 243.

Hab. Peru (*Tschudi*).

"Similar in shape to *Aur. lutea*, but much smaller."

35. MELAMPUS BOHOLENSIS.

Shell imperforate, ovate, somewhat fusiform, solid, smooth, shining, marked with distant longitudinal grooves, chestnut-coloured, pale-banded near the base; spire convexly conoidal, mucronate; suture irregular; whorls eight, flat, the last forming three-fourths of the total length, inflated above and angulated obsoletely, attenuated at base; body of the penult whorl bearing three minute teeth, the middle of which is somewhat larger; aperture rather oblique, linear; columellar plait small, oblique, produced outwards; peristome straight, acute; right margin furnished within with a white callus, bearing six to seven short teeth; columellar margin slightly reflexed, adnate. Length 14, breadth $7\frac{1}{2}$ mill.

Melampus Boholensis, *H. and A. Adams, Gen. rec. Moll.* ii. p. 243.

Pfr. Syn. Auric. n. 32; *Mon. Auric.* p. 38.

Auricula Küsteri, var., *Küst. Auric.* p. 35. t. 4. f. 12, 13 ?

Hab. Isle of Bohol, Philippines.

36. MELAMPUS FASCIATUS.

B.M.

Shell subperforate, ovate, somewhat fusiform, rather solid, almost smooth, shining, white, with five to six fulvous bands, sometimes uniformly pale; spire short, convexly conoidal, apex acutely mucronate; suture linear; whorls nine, the upper ones rather flat, the last forming about two-thirds of the total length, attenuated at base; aperture perpendicular, narrow, effused, but not dilated at its base, modified by three parietal and one columellar plait, which are nearly equidistant, dentiform; peristome acute; right margin thickened within by a white callus, bearing four to five short transverse ridges; columellar margin dilated, slightly reflexed. Length 13, greatest breadth 8 mill.

Auricula fasciata, *Deshayes in Enc. Méth.* ii. p. 90. n. 8.

Lam. Hist. viii. p. 337. n. 25.

Küst. Auric. t. A. f. 2, 3.

Mouss. Jav. Moll. p. 46. t. 5. f. 7.

Auricula monile, *Quoy and Gaim. Astrol.* ii. p. 166. pl. 13. f. 28–33.

Pot. et Mich. Gal. Douai, i. p. 202.

Reeve, Conch. Syst. ii. pl. 187. f. 8.

Melampus fasciatus, *Beck, Ind.* p. 107. n. 6.

H. and A. Adams in Proc. Zool. Soc. 1854, p. 11. n. 21.

Pfr. Syn. Auric. n. 33; *Mon. Auric.* p. 38.

Conovulus fasciatus, *Griff. Anim. Kingd.* p. 27. f. 13.

Anton, Verz. p. 48. n. 1774.

Guérin, Iconogr. p. 17. t. 7. f. 8.

Cassidula ? *monilis*, *M. E. Gray, Fig. Moll. Anim.* pl. 306. f. 10, 11.

Auricula tæniola, *Hombr. & Jacq. Voy. Pôle Sud, Zool.* v. p. 37. pl. 9. f. 16–19.

Auricula soricina, *Hombr. and Jacq. ib.* p. 38 (*Aur. sauricina*), pl. 9. f. 23–26.

Tralia (*Pira*) *fasciata*, *H. and A. Adams, Gen. rec. Moll.* ii. p. 244.

β. Larger, with the spire elongated; parietal teeth sometimes obsolete. Length 17, breadth 9 mill.

Lister, Hist. t. 834. f. 61.

Voluta flammea δ, *Gmel. Syst.* p. 3435.

Conovulus zonatus, *Mühlf. MSS.*

Anton in Z. f. M. 1847, p. 171.

Auricula fasciata, δ. *Listeri*, *Beck, Ind.* p. 107.

Auricula fasciata, *Küst. Auric.* p. 33. t. 5. f. 9–11.

Hab. New Hibernia and New Guinea; Philippine Islands; Java.

37. MELAMPUS CAFFER.

B.M.

Shell subrimate, ovate, solid, rather smooth and shining, brownish-yellow, with two broad chestnut-coloured bands, one of which is above, the other near the base, and sometimes a brown basal spot; spire short, chestnut-coloured, convexly conoidal, slightly mucronate; suture linear; whorls seven, the upper ones scarcely convex, the last forming three-fourths of the total length, slightly striated near the suture, rather attenuated towards the base; aperture nearly perpendicular, narrow, a little dilated in front; parietal teeth two, middle-sized near the columella, and a third smaller above; columellar plait middle-sized, produced outwards; peristome simple, acute, brown; right margin slightly arcuate, thickened within by a longitudinal callus, sending off five to six distant transverse ridges; columellar margin short, slightly thickened, appressed. Length 13, greatest breadth 8 mill.

Auricula caffra, *Küst. Auric.* p. 36. t. 5. f. 6-8.

Krauss, Südafr. Moll. p. 82.

Melampus ater, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 10. n. 13; *Gen. rec. Moll.* ii. p. 243.

Melampus caffer, *Pfr. Syn. Auric.* n. 34; *Mon. Auric.* p. 40.

β. Smaller, rather uniformly blackish.

Conovulus ater, *Mühlf. MSS.*

Anton, Verzeichn. p. 48. n. 1773.

Hab. Natal (*Krauss*); Bohol and Capul, Philippines (*H. Cumming*). Var. β. Isle of Oheatora.

38. MELAMPUS LIVIDUS.

Shell subimperfurate, conoidally ovate, solid, smooth, livid or brownish; spire short, convexly conoidal, mucronate; suture linear; whorls nine to ten, rather flat, the last forming two-thirds of the total length, indistinctly angled above, scarcely attenuated in front; aperture nearly perpendicular, elongately semiovate, dilated and rounded at base; parietal plaits three, small, deeply placed, dentiform; columellar plait a little stronger, chestnut-coloured; peristome acute, with the margins not united; right margin furnished within with seven small white teeth, the lower of which are somewhat elongated inwards; columellar margin slightly reflexed, chestnut-coloured. Length 15-18, breadth $9\frac{1}{2}$ -11 mill.

Auricula livida, *Deshayes in Enc. Méth.* ii. p. 91. n. 10.

Lam. Hist. viii. p. 338. n. 26.

Küst. Auric. p. 44. t. 6. f. 21-25.

Krauss, Südafr. Moll. p. 81.

Melampus lividus, *Beck, Ind.* p. 106. n. 3.

H. and A. Adams in Proc. Zool. Soc. 1854, p. 10. n. 12;

Gen. rec. Moll. ii. p. 243.

Pfr. Syn. Auric. n. 35; *Mon. Auric.* p. 40.

β. Shell more elongated and slender. Length 16, greatest breadth 9 mill.

Hab. Natal, South Africa (*Krauss*), and Isle of Mauritius.

39. MELAMPUS SINGAPORENSIS.

Shell imperforate, ovate, somewhat fusiform, rather solid, minutely striated longitudinally, and marked with rather distant spiral punctured striæ, rather shining, brown, sometimes with pale bands; spire convexly conoidal, rather acuminate; suture linear, nearly regular; whorls seven, rather flat, the last forming a little more than two-thirds of the total length, turgid above, attenuated and with spiral striæ more crowded at base; aperture nearly perpendicular, extremely narrow, not dilated in front; parietal plaits three, the two upper minute, the third strong, transverse, white; columellar plait strong, oblique, compressed, continued arcuately into the basal margin; peristome thin, sharp; right margin bearing three deeply placed transverse plaits, with minute teeth between them. Length $12\frac{1}{2}$, breadth $7\frac{1}{2}$ mill.

Melampus Singaporensis, *Pfr. in Malak. Bl.* 1855, p. 8.

H. and A. Adams, Gen. rec. Moll. ii. p. 243.

Pfr. Novit. Conch. i. n. 81. p. 46. t. 12. f. 15, 16; *Mon. Auric.* p. 41.

Hab. Singapore (*J. S. Bacon*).

40. MELAMPUS GRANIFER.

Shell subrimate, acorn-shaped, rather solid, not shining, fuscous, granulated with close-set spiral furrows and longitudinal striæ; spire convexly conoidal, slightly mucronate; suture irregular, somewhat canaliculate; whorls seven, flat, the last forming about three-fourths of the total length, moderately angulated and marked with a pale band above the middle, attenuated in front; aperture nearly perpendicular, narrow, oblong; parietal plaits three, the upper one punctiform, the other transverse; columellar plait obliquely descending to the base; peristome thin, sharp; right margin furnished within on the upper half with three to four transverse ridges; columellar margin callous, appressed. Length $10\frac{1}{2}$, breadth 6 mill.

Auricula granifera, *Mouss. Jar. Moll.* p. 46. t. 5. f. 9, t. 20. f. 7.

Auricula granosa, *Hombr. et Jacq. Voy. Pôle Sud, Zool.* v. p. 38. pl. 9. f. 20-22.

Melampus (*Tralia*) *granifer*, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 12. n. 30.

Melampus granifer, *Pfr. Syn. Auric.* n. 36; *Mon. Auric.* p. 42.

Tralia (*Signia*) *granifera*, *H. and A. Adams, Gen. rec. Moll.* ii. 245.

Hab. Bay of Pampang, Java (*Zollinger*); Isle of Bureas, Philippines (*H. Cuming*).

41. MELAMPUS CRISTATUS.

Shell imperforate, oblong-ovate, solid, crowdedly striated spirally, silky-shining, yellowish-fulvous; spire short, convex, mucronate; suture channeled; whorls eight, moderately convex, the penultimate one broader, the last forming two-thirds of the total length, ventricose above the middle, attenuated in front; aperture scarcely oblique, very narrow, divided into two sinuses at base; parietal plaits three, the upper one nodiform, the other two rather transverse, continued externally into a callous spiral crest; columellar plait strong, nearly vertical; peristome sharp; right margin furnished within with a thick white callus, bearing crowded transverse ridges; columellar margin somewhat dilated, appressed. Length $9\frac{1}{2}$, breadth 6 mill.

Melampus cristatus, *Pfr. in Proc. Zool. Soc.* 1854, p. 122; *Syn.*

Auric. n. 37; *Novit. Conch.* i. p. 17. n. 27. t. 5. f. 3-5; *Mon.*

Auric. p. 43.

H. and A. Adams, Gen. rec. Moll. ii. p. 243.

Hab. Philippine Islands.

§ 5. *Labrum furnished with more or less distant parallel transverse ribs; body of the penultimate whorl bearing more than three plaits.*

42. MELAMPUS TRIFASCIATUS.

Shell subimate, obconically ovate, solid, smooth, shining, dark reddish-brown, with three narrow pale bands; spire short, convexly conoidal, rather pointed; suture linear; whorls nine, rather flat, the upper ones marked regularly with minute impressed striæ; the last forming about three-fourths of the total length, attenuated and somewhat ventricose at base; aperture nearly perpendicular, narrow, dilated in front; parietal plaits five, the two upper and the fifth dentiform, the third and fourth lamelliform; columellar plait middle-sized, produced outwards; peristome sharp; right margin rather rectilinear, furnished within with a strong white callus, bearing about five teeth; columellar margin callous, brown, a little spreading. Length 14, greatest breadth 9 mill.

Auricula trifasciata, *Küst. Auric.* p. 38. t. 5. f. 15-17.

Melampus trifasciatus, *Pfr. Syn. Auric.* n. 38; *Mon. Auric.* p. 43.

H. and A. Adams, Gen. rec. Moll. ii. p. 243.

Hab. —?

43. MELAMPUS TRILINEATUS.

Shell obovate, dark brownish-red, with three spiral distant white lines on the last whorl, of which the anterior line is not so well defined, rufous on the columella, with irregular striæ of growth; apex obtuse? spire very small, with curvilinear outlines; whorls six to seven? very narrow, imbricately appressed, with the suture distinct; last whorl very large, convolute; aperture very long, narrow; labrum not sharp, with a deposit over the whole visible interior, which is transversely plaited; at the end of the columella is a twisted plait, separated by a sinus from a large transverse plait, above which are four small approximate transverse plaits. Length 0·71, breadth 0·43 inch. (*Adams.*)

Auricula trilineata, *C. B. Ads. in Ann. Lyc. N. York*, v. p. 436. 543.

Melampus trilineatus, *Pfr. Syn. Auric.* n. 39; *Mon. Auric.* p. 44.

H. and A. Adams, Gen. rec. Moll. ii. p. 243.

Hab. Panama.

§ 6. *Labrum furnished with indistinct transverse ridges.*

44. MELAMPUS PYRIFORMIS.

Shell imperforate, fusiformly oblong, solid, smooth, striated irregularly and minutely, olivaceous-brownish, with yellow spots and short streaks; spire very short, conic, with the apex pointed, blackish; suture linear, irregular; whorls seven, the upper ones rather flat, the last forming about four-fifths of the total length, very indistinctly angulated above the middle, attenuated towards the base; aperture scarcely oblique, oblong-semiovate, purplish-brown within; parietal plaits two (rarely three to four), the upper ones deep, indistinct, the last small, tooth-shaped, entering; columellar plait twisted, prominent; peristome pale-bordered; right margin almost smooth within, or bearing three slight transverse ridges, slightly arcuate, sinuated above; columellar margin rather callous. Length 13½, greatest breadth 8 mill.

Auricula piriformis, *Petit in Proc. Zool. Soc.* 1842, p. 202.

Auricula maura, *Küst. Auric.* p. 37. t. 5. f. 12–14.

Conovulus maurus, *Mühlf. MSS.*

Anton, Verzeichn. p. 48. n. 1778.

Pythia maurus, *Anton in lit.*

Melampus pyriformis, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 10. n. 7, and

Melampus (Tralia) *maurus*, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 11. n. 23 ?

Melampus *piriformis*, *Pfr. Syn. Auric.* n. 40; *Mon. Auric.* p. 44.
H. and A. Adams, Gen. rec. Moll. ii. p. 243.

Melampus *lacryma*, *Beck, Ind.* p. 108. n. 16 ? (Tumaco; no description).

Hab. Isle of Tumaco, W. Columbia (*H. Cuming*).

45. MELAMPUS BIDENTATUS.

Shell imperforate, elliptically ovate, rather thin, with irregular longitudinal wrinkles, greyish horn-coloured, for the most part eroded; spire short, conoidal, rather blunt; suture obliterated; whorls six to seven, moderately convex, narrow, the last forming three-fourths of the total length, slightly angled near the suture, ventricose in the middle, attenuated in front; aperture nearly perpendicular, narrow, oblong acuminate, with two teeth, one parietal, compressed, entering, the other columellar, twisted, descending arcuately to the labrum; peristome simple; right margin sharp, scarcely arched, smooth within, or bearing a longitudinal callus sending off two to three, more or less, distinct transverse plaits; columellar margin short, callous, adnate. Length 12, greatest breadth 7 mill.

Melampus *bidentatus*, *Say in Philad. Journ.* ii. p. 245.

H. and A. Adams in Proc. Zool. Soc. 1854, p. 10. n. 6; *Gen. rec. Moll.* ii. p. 243.

Pfr. Syn. Auric. n. 41; *Mon. Auric.* p. 45.

Melampus *corneus*, *Beck, Ind.* p. 107. n. 12.

Stimps. Shells of N. Eng. p. 51.

Melampus *lineatus*, *Beck, Ind.* p. 107. n. 7.

Auricula *cornea*, *Desh. in Enc. Méth.* ii. p. 90. n. 9.

Lam. Hist. viii. p. 339. n. 28.

Auricula *bidentata*, *Gould, Massach.* p. 197. f. 130.

De Kay, Zool. of New York, Moll. p. 57. pl. 5. f. 92.

Küst. Auric. p. 41. t. 6. f. 7-11.

β. Shell marked with rather waved fuscous lines.

Melampus *lineatus*, *Say in Philad. Journ.* ii. p. 246.

γ. Last whorl slightly excavated near the suture, minutely striated spirally; labrum (behind a fuscous border) whitish, callous, with six to ten transverse ridges.

Melampus *borealis*, *Conr.*

H. and A. Adams, Proc. Zool. Soc. 1854, p. 10. n. 11.

Hab. United States: New York, Massachusetts, Vermont, Carolina. Var. γ. Georgia.

46. MELAMPUS OBOVATUS.

Shell imperforate, obversely conic, rather thin, irregularly striated longitudinally, horn-coloured fuscous, with indistinct paler bands; spire short, rather convex, obtuse; suture linear, irregular; whorls six, rather flat, the last forming four-fifths of the total length, attenuated towards the base, which is obsoletely striated spirally, and somewhat gibbous; aperture perpendicular, narrow, rounded in front; parietal plait one, middle-sized, transverse; columellar plait oblique, rather twisted; peristome simple, acute; right margin sometimes furnished within with two obsolete transverse ridges. Length $8\frac{1}{3}$, breadth 5 mill.

Melampus obovatus, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 12. n. 32; *Gen. rec. Moll.* ii. p. 243.

Pfr. Syn. Auric. n. 42; *Norit. Conch.* i. p. 21. n. 34. t. 6. f. 10-12; *Mon. Auric.* p. 46.

Hab. Liberia (*Dr. Parkins*).

§ 7. *Labrum with a single internal transverse rib.*
TRALIA, Gray.

47. MELAMPUS PUSILLUS.

B.M.

Shell imperforate, fusiformly ovate, solid, smooth, slightly shining, dark fuscous or yellowish; spire regularly conic, apex rather pointed; suture linear, somewhat irregular; whorls six to seven, the upper ones rather flat, the last forming two-thirds of the total length, slightly attenuated at base; aperture nearly perpendicular, semioval, dilated and rounded in front, with three almost equidistant plaits; parietal plaits two, the upper one small, the other strong, horizontal; columellar plait smaller, twisted, not prominent; peristome obtuse; right margin callous within, externally sinuated above the middle, internally bearing a whitish transverse rib; columellar margin slightly reflexed, appressed. Length 14, greatest breadth 8 mill.

Martini, Conch. ii. p. 119, 127. t. 43. f. 446.

Favanne, t. 65. f. *H.* 4.

Voluta, no. 108, *Schröt. Einl.* i. p. 273.

Voluta pusilla, *Gmel. Syst.* p. 3436. n. 7.

Dillw. Cat. i. p. 507. n. 20.

Wood, Ind. t. 19. f. 20.

Voluta triplicata, *Donov. Brit. Sh.* iv. pl. 138.

Mont. Test. Br. Suppl. p. 99.

Dillw. Cat. i. p. 507. n. 19.

Wood, Ind. pl. 19. f. 19.

Bulimus ovulus, *Brug. in Enc. Méth.* i. p. 339. n. 71.

Melampa ovulum, *Schweigg. Handb.* p. 739.

Acteon triplicatus, *Flem.*

Auricula ovula, *Fér. Prodr.* p. 104. n. 21.

Auriculanitens, *Lam. Hist.* vi. 2. p. 141. n. 13; ed. *Desh.* viii. p. 332.
Küst. Auric. p. 18. t. 2. f. 11-13.

Auricula pusilla, *Desh. in Lam. Hist.* viii. p. 332.

Jay, Cat. 1850, p. 265. n. 6171.

Petit in Journ. Conch. ii. 1851, p. 427.

Auricula leucodonta, *Nutt. MSS.*

Conovulus nitens, *Voigt in Cur. Thierr.* iii. p. 112.

Conovulus pusillus, *Ant. Verz.* p. 48. n. 1777.

Forb. and Hanl. Brit. Moll. iv. p. 197.

Melampus ovulum, *Loew in Zool. Journ.* v. p. 289.

Melampus pusillus, *C. B. Adams, Contr. to Conch.* p. 42. 186.

H. and A. Adams in Proc. Zool. Soc. 1854, p. 10. n. 15.

Poey, Memor. i. p. 394.

Pfr. Syn. Auric. n. 43; *Mon. Auric.* p. 46.

Melampus nitens, *Shuttl. Diagn. n. Moll.* no. 7. p. 161.

Pythia ovulum, *Beck, Ind.* p. 104. n. 8, *et triplicata*, *Beck, ib.* n. 7.

Tralia pusilla, *Gray in Turt. Man.* p. 21.

H. and A. Adams, Gen. rec. Moll. ii. p. 244. pl. 82. f. 8.

Tralia ovulum, *Mörch, Cat. Yold.* p. 38. n. 783.

Hab. West Indies: Guadaloupe, Jamaica, Cuba. Sandwich Islands: Oahu.

48. MELAMPUS PANAMENSIS.

Shell imperforate, ovate-oblong, solid, smooth, with irregular striae of growth, shining, blackish-brown; spire conic, convex towards the acuminate apex; suture impressed, somewhat irregular; whorls eight, the upper ones moderately convex, the penultimate rather flat, last a little longer than the spire, slightly compressed near the suture, then angulated obsoletely, scarcely attenuated in front, somewhat gibbous; aperture scarcely oblique, acuminately semioval, with three equidistant white plaits; parietal plaits two, convergent, the upper one small, the other strong; columellar plait twisted; peristome blunt: right margin sinuated, thickened within by a longitudinal callosus, sending off, above the middle, a transverse rib; columellar margin callous, dilated, appressed. Length 11, breadth 5 mill.

Auricula Panamensis, *C. B. Adams in Ann. Lye. N. York.* v. p. 433, 542.

Melampus (Tralia) Panamensis, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 10. n. 16.

Melampus Panamensis, *Pfr. Syn. Auric.* n. 44; *Mon. Auric.* p. 48.

Tralia Panamensis, *H. and A. Adams, Gen. rec. Moll.* ii. p. 244.

Hab. Panama and Taboga.

49. MELAMPUS NITIDULUS.

Shell imperforate, ovate-oblong, smooth, shining, brown; spire convexly conic, pointed; suture linear, indistinct near the apex; whorls about six, rather flat, the last forming about two-thirds of the total length, slightly inflated above the middle, imperceptibly attenuated at base; aperture perpendicular, narrowly semioval; parietal plaits two, the upper one nodiform, the other middle-sized, rather compressed; columellar plait a little smaller, twisted, not produced outwards; peristome blunt; right margin furnished within with a longitudinal callus, which is thicker above, and sends off a transverse rib; columellar margin reddish-brown, callous, appressed. Length 10, breadth 5 mill.

Melampus (Tralia) *nitidulus*, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 12. n. 37.

Pfr. Syn. Auric. n. 45; *Mon. Auric.* p. 49.

Tralia nitidula, *H. and A. Adams, Gen. rec. Moll.* ii. p. 244.

Hab. Isle of Bohol, Philippines?

50. MELAMPUS BRONNI.

Shell imperforate, ovate-acuminated, solid, striated concentrically, whitish-grey, with two broad, sometimes confluent, blackish-brown bands; spire convexly conic, pointed, pale; suture slight; whorls nine, scarcely convex, the last a little longer than the spire, more ventricose; aperture rather oblique, semioval, modified by two parietal plaits, which are equal, oblique, white, and by a smaller twisted columellar plait; peristome sharp; right margin slightly arcuate, furnished in the middle of its inner side with a white transverse rib; columellar margin somewhat dilated, appressed. Length 10, breadth 6 mill.

Auricula Bronni, *Philippi in Zeitschr. f. Malak.* 1846, p. 98.

Melampus Bronni, *Pfr. Syn. Auric.* n. 46; *Mon. Auric.* p. 49.

Ellobium Brownii, "*Phil.*," *H. and A. Adams, Gen. rec. Moll.* ii. p. 237?

Hab. Sandwich Islands.

51. MELAMPUS SANDWICHIENSIS.

B.M.

Shell ovate-conical, finely sulcated longitudinally, whitish-yellow with brown bands; whorls seven, depressed, slightly convex, the last longer than the spire; aperture oval; lip furnished with three plaits, the upper ones lamelliform, the third tooth-shaped; labrum sharp, with a single elongated plait within. Length 12, breadth 7 mill. (*Soul.*)

Auricula Sandwichiensis, *Souleyet, Voy. Bonite, Zool.* ii. p. 524. pl. 29. f. 29-32.

Ophicardelus Sandwichensis, *M. E. Gray, Fig. Moll. Anim.* pl. 304. f. 2.

Ophicardelus (*Laimodonta*) *Sandwichensis*, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 34. n. 4.

Laimodonta Sandwichensis, *H. and A. Adams, Gen. rec. Moll.* ii. p. 246. pl. 83. f. 1, 1a.

Melampus Sandwichensis, *Pfr. Mon. Auric.* p. 50.

Hab. Sandwich Islands. Perhaps a variety of *M. Bronni*, *Phil.*

52. MELAMPUS QUOYI.

Shell imperforate, conically ovate, solid, slightly striated, shining, blackish-brown, marked with narrow pale bands; spire conic, apex obtuse; suture slight; whorls five, moderately convex, the last forming nearly two-thirds of the total length, rather tumid above the middle, furnished at its base with a keel surrounding the umbilical region; aperture oblique, semioval; one parietal plait, middle-sized, entering; columellar plait small, oblique, produced externally; peristome straight; right margin thin and sharp above, then thickened by an inner callus; columellar margin white, spreading narrowly. Length 10, greatest breadth 6 mill.

Ophicardelus Quoyi, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 34. n. 2.

Melampus Quoyi, *Pfr. Syn. Auric.* n. 47; *Mon. Auric.* p. 50.

Laimodonta Quoyi, *H. and A. Adams, Gen. rec. Moll.* ii. p. 246.

Hab. Moreton Bay, Australia.

53. MELAMPUS LAYARDI.

Shell imperforate, ovate-fusiform, rather solid, sculptured regularly with close-set spiral grooves, blackish-brown, with a single white band near the suture; spire conic, rather pointed; suture linear; whorls six, flat, the last forming about three-fifths of the total length, indistinctly angled above, attenuated in front; aperture oblique, semioval; parietal plaits two, parallel to each other, compressed, minute; columellar plait punctiform; peristome sharp, right margin furnished with a single transverse lamellar ridge; columellar margin rather callous. Length 6, breadth $3\frac{1}{3}$ mill.

Ophicardelus (*Laimodonta*) *Layardi*, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 35. n. 7.

Melampus Layardi, *Pfr. Syn. Auric.* n. 48; *Mon. Auric.* p. 51.

Laimodonta Layardi, *H. and A. Adams, Gen. rec. Moll.* ii. p. 246.

Hab. Ceylon (*Mr. Layard*).

§ 8. *Labrum not plaited; body of the penultimate whorl smooth.*

54. MELAMPUS CORONATUS.

Shell obconic, reddish-purple, with several spiral punctate and distant transverse striæ, and a deciduous epidermis, which is produced into a small spine at each of the principal transverse striæ on the spire; spire rather short, with slightly concave outlines; apex very acute; whorls about seven, slightly angled, with a moderately impressed suture; aperture with a large solid spiral prominent callus or tooth on the columella. The two specimens before me may be young shells, but probably belong to a new species. Length 0.11, breadth 0.07 inch. (*Adams.*)

Melampus coronatus, *C. B. Adams, Contrib. to Conch.* no. 3. p. 41.

Pfr. Syn. Auric. n. 49; *Mon. Auric.* p. 51.

H. and A. Adams, Gen. rec. Moll. ii. p. 243.

Melampus coronulus, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 10. n. 10.

Hab. Jamaica.

Mr. Shuttleworth declares this species to be the young of the *Mel. monilis*.

55. MELAMPUS ? UNIPLICATUS.

Shell small, ovate-oblong, solid, often eroded, whitish-yellow, very minutely striated longitudinally; spire short, conic; whorls five, convex; aperture subovate; columella white at its base, with a single plait; labrum simple, thickened. Length 12, breadth 4 mill. (*Mittre.*)

Auricula uniplicata, *Mittre in Revue Zool.* 1841, p. 67.

Melampus ? uniplicatus, *Pfr. Syn. Auric.* n. 50; *Mon. Auric.* p. 52.

Hab. St. Louis, Senegal.

§ 9. *Labrum not plaited; body of the penultimate whorl with a single plait.*

56. MELAMPUS AUSTRALIS.

Shell imperforate, ovate-conic, rather solid, almost smooth, greenish horn-coloured, for the most part with brownish bands; spire elongated, conic, pointed, often eroded; suture linear; whorls nine, flat, sculptured with slight arcuate striæ near the

suture, the last forming about three-fifths of the total length, convex, attenuated at base; aperture rather oblique, semiovate; parietal plait one, horizontal, produced externally into an obtuse keel surrounding the umbilical region; columellar plait oblique, reaching the margin of the aperture; peristome sharp; right margin smooth, dilated above in front; basal margin rather expanded. Length 15–16, breadth 8 mill.

Auricula australis, Quoy and Gaim. *Voy. Astrol.* ii. p. 169. pl. 13. f. 34–38.

Desh. in Lam. Hist. viii. p. 333. n. 15.

Reeve, Conch. Syst. ii. pl. 187. f. 3.

Küst. Auric. p. 47. t. 7. f. 9, 10.

Forbes in Voy. Rattlesnake, App. p. 361.

Auricula ovata, Gray, *Spic. Zool.* p. 8. t. 6. f. 21.

Auricula bidens, "Say," *Potiez et Michaud, Gal. Douai*, i. p. 201. pl. 20. f. 9, 10.

Ophicardelus australis, Beck, *Ind.* p. 108. n. 1.

Gray in Proc. Zool. Soc. 1847, p. 179.

M. E. Gray, Fig. Moll. Anim. pl. 306. f. 8, 9.

H. and A. Adams in Proc. Zool. Soc. 1854, p. 34. n. 1; *Gen. rec. Moll.* ii. p. 245. pl. 82. f. 9, 9a.

Melampus australis, *Pfr. Syn. Auric.* n. 51; *Mon. Auric.* p. 52.

Hab. Australia: Port Western and Van Diemen's Land (*Quoy*); Brisbane Water (*Macgillivray*).

57. MELAMPUS COSTELLARIS.

Shell rimate, ovate-conic, solid, ribbed longitudinally, brown, with irregular pale streaks; spire conic, blunt; suture irregularly impressed; whorls five to six, the upper ones flat or rather excavated, the last forming about four-sevenths of the total length, very obsoletely angled, and girdled with a pale line at its upper circumference, somewhat tuberculate at base; aperture nearly perpendicular, sinuately ovate; parietal plait one, strong, deep, rather transverse; columellar plait a little smaller, produced externally; peristome blunt; right margin sinuated above, then thickened by an internal deposit; columellar margin dilated, rather adnate. Length $11\frac{2}{3}$, breadth $6\frac{1}{2}$ mill.

Melampus costellaris, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 12. n. 36.

Pfr. Syn. Auric. n. 52; *Mon. Auric.* p. 53; *Novit. Conch.* i. p. 22. n. 36. t. 6. f. 15, 16.

Tralia (Persa) costellaris, *H. and A. Adams, Gen. rec. Moll.* ii. p. 245.

Hab. New Zealand (*Mr. Strange*).

58. MELAMPUS SULCATUS.

Shell subrimate, ovate, solid, sculptured above with crowded granular ridges, brown, with three pale bands; spire conic, obtuse; suture linear, slightly canaliculate; whorls five, flat, the last forming two-thirds of the total length, slightly angulated above, then more distinctly grooved spirally, furnished at base with a very slight keel surrounding the umbilical region; aperture scarcely oblique, semiovate, showing the same colour and bands within; parietal plait one, compressed, transverse; columellar plait scarcely smaller, rather oblique; peristome straight, sharp; columellar margin somewhat spreading in adult specimens. Length 12, greatest breadth 6 mill.

Ophicardelus (Laimodonta) *sulcata*, *H. and A. Adams in Proc. Z. S.* 1854, p. 34. n. 6.

Melampus sulcatus, *Pfr. Syn. Auric.* n. 53; *Mon. Auric.* p. 54.
Laimodonta sulcata, *H. and A. Adams, Gen. rec. Moll.* ii. p. 246.
Hab. New Zealand.

59. MELAMPUS EXARATUS.

Shell imperforate, fusiformly ovate, rather solid, sculptured with spiral ridges, which are rather distant near the suture, but close-set in the remaining part, and with extremely crowded longitudinal striæ, dirty fulvous; spire convexly conical, obtuse; whorls five, flat, rather imbricate, the last forming three-fifths of the total length, slightly inflated above the middle, somewhat compressed at base; aperture rather oblique, acuminate, semiovate, modified by two almost equal plaits, one below the middle of the body of penult whorl, the other columellar, transverse; peristome sharp, straight; right margin sinuated above; columellar margin narrow, affixed. Length $7\frac{1}{2}$, breadth $4\frac{2}{3}$ mill.

Melampus (Tralia) *exaratus*, *H. and A. Adams in Proc. Z. S.* 1854, p. 13. n. 39.

Pfr. Syn. Auric. n. 54; *Novit. Conch.* i. p. 22. n. 37. t. 6. f. 17-19; *Mon. Auric.* p. 54.

Tralia (Signia) *exarata*, *H. and A. Adams, Gen. rec. Moll.* ii. p. 245.

Hab. Calabonga, Isle of Samar, Philippines.

60. MELAMPUS INFREQUENS.

Shell imperforate, ellipsoidally ovate, thin, striated, brown, with an indistinct pale band near the suture, which is deeply impressed; spire convexly conic, pointed; whorls six, convex, slightly angulated above, the last forming three-fifths of the

total length, compressed laterally, rather swollen at base; aperture scarcely oblique, broadly semiovate; parietal plait single, thin, rather transverse; columellar plait stronger, dentiform; peristome thin, straight; right margin sinuate, smooth within. Length 6, breadth 4 mill.

Auricula infrequens, C. B. Adams in *Ann. Lyc. N. York*, v. p. 433. 542.

Melampus (*Tralia*) *infrequens*, H. and A. Adams in *Proc. Z. S.* 1854, p. 11. n. 18.

Pfr. Syn. Auric. n. 55; *Mon. Auric.* p. 55 (*Leuconia*?).

Tralia infrequens, H. and A. Adams, *Gen. rec. Moll.* ii. p. 244.

Hab. Panama.

61. MELAMPUS STUTCHBURYI.

Shell subumbilicate, fusiformly ovate, rather solid, faintly striated, encircled near the suture with bluntly elevated ridges, opaque, blackish-brown, with three white bands; spire convexly conic, with the apex pointed, but sometimes slightly eroded; suture linear, lacerated on the lower whorls; whorls seven, flat, the last forming nearly three-fifths of the total length, marked with obsolete spiral striæ below its middle, slightly attenuated at base; aperture nearly perpendicular, semiovate; parietal plait single, compressed, white, entering, produced externally into a rather acute keel surrounding an infundibuliform umbilical hole; columellar plait compressed, scarcely ascending obliquely; peristome sharp; right margin not toothed, sinuate above; columellar margin vaulted and reflexed, free, simulating an umbilicus. Length 16, breadth 8 mill.

Melampus (*Ophicardelus*) *Stutchburyi*, *Pfr. in Proc. Zool. Soc.* 1856.

Hab. Port Curtis, Australia (*Mr. Stutchbury*).

§ 10. *Labrum not plaited; body of the penultimate whorl with two plaits.*

62. MELAMPUS COSTATUS.

Shell imperforate, ovate, solid, sculptured with strong longitudinal ribs, which are contracted near the suture into blunt tubercles, slightly shining, reddish brown or yellow; spire short, conoidal, rather pointed; whorls seven, flat, the last forming two-thirds of the total length, slightly inflated above, attenuated at base; aperture perpendicular, oblong-semiovate, modified by three almost equal plaits; parietal plaits two, compressed, the columellar one high, dentiform; peristome

straight, right margin somewhat thickened within; columellar margin dilated, callous, prominent. Length 10, greatest breadth 6 mill.

Auricula costata, Quoy and Gaim. *Astrol.* ii. p. 173. pl. 13. f. 43-46.

Desh. in Lam. Hist. viii. p. 337. n. 24.

Küst. Auric. p. 46. t. 17. f. 5-7.

Melampus costatus, Beck, *Ind.* p. 107. n. 13.

Pfr. Syn. Auric. n. 56; *Mon. Auric.* p. 55.

Melampus (*Tralia*) *costatus*, H. and A. Adams in *Proc. Z. S.* 1854, p. 12. n. 31.

Tralia (*Persa*) *costata*, H. and A. Adams, *Gen. rec. Moll.* ii. p. 245.

Hab. Port Carteret, New Ireland.

63. MELAMPUS DUPLICATUS.

Shell imperforate, oblong, solid, arcuately striated, white, covered with a deciduous greenish-fulvous periostraca; spire short, conoidal, rather obtuse; suture obsolete; whorls five to six, contiguous, the last forming three-fourths of the total length, inflated above the middle, slightly attenuated at base; aperture perpendicular, semielliptical, channeled in front; body of the penultimate whorl bearing a nodiform callus, and below it a transverse lamelliform plait; columella duplicate, with two oblique parallel plaits; peristome simple; right margin somewhat arched, with a slight deposit within. Length 10, breadth $5\frac{1}{2}$ mill.

Melampus duplicatus, *Pfr. in Proc. Zool. Soc.* 1854, p. 151; *Syn.*

Auric. n. 57; *Novit. Conch.* i. p. 17. n. 28. t. 5. f. 6-8; *Mon. Auric.* p. 56.

Tralia (*Persa*) *duplicata*, H. and A. Adams, *Gen. rec. Moll.* ii. p. 245.

Hab. — ?

64. MELAMPUS ? EXIGUUS.

Shell ovate-turbinate, rather coniform, slightly shining, sculptured with crowded, very minute, indistinct spiral striæ; columella three-plaited; labrum smooth, with an internal longitudinal rib parallel to the margin. Colour chestnut-rufous, clouded with paler spots. Length scarcely $\frac{4}{16}$, breadth scarcely $\frac{3}{16}$ inch. (*Lowe*.)

Melampus exiguus, *Lowe in Zool. Journ.* v. p. 291. pl. 13. f. 6-7.

Pfr. Syn. Auric. n. 58; *Mon. Auric.* p. 56.

Melampus (*Tralia*) *exiguus*, H. and A. Adams in *Proc. Z. S.* 1854, p. 11. n. 19.

Pythia exigua, *Beck, Ind.* p. 104. n. 6.

Auricula exigua, *Loewe in Proc. Z. S.* 1854, p. 218.

Hab. Porto San Lorenzo, Madeira.

65. MELAMPUS CONCINNUS.

Shell ellipsoidal, blackish-brown, paler on the convexity of the last whorl, with a yellowish-white spiral band on the last whorl issuing from beneath the suture, with the plaits and callus in the aperture white, smooth and shining; apex acute; spire with very curvilinear outlines; whorls five, convex, imbricately appressed, with the suture moderately impressed; last whorl long; aperture narrow, and very acute above, much contracted by the plaits; labrum sharp, in the lower part much thickened within by a broad thick deposit; plaits three, of which the lower one is very oblique, and the upper one very large, concave on the lower side, and on the upper side extended to the apex of the aperture by a transversely ridged surface. Length 0.32, breadth 0.2 inch. (*Adams.*)

Auricula concinna, *C. B. Adams in Ann. Lyc. N. York*, v. p. 432, 542.

Ophicardelus (*Laimodonta*) *concinna*, *H. and A. Adams in Proc. Z. S.* 1854, p. 34. n. 5.

Melampus concinnus, *Pfr. Syn. Auric.* n. 59; *Mon. Auric.* p. 57.

Pedipes concinnus, *H. and A. Adams, Gen. rec. Moll.* ii. p. 249?

Hab. Near Panama.

Species not sufficiently known.

66. MELAMPUS SCIURI.

Shell ovate, smooth, brown, or very often reddish-yellow, with two black bands on the extremities of the last whorl; spire very short, conical, generally chestnut-coloured; last whorl large, ventricose, furrowed anteriorly by striae of growth; aperture narrow, rounded in front, bluish-white within, modified by three plaits, one (which is obsolete sometimes) on the body of the penultimate whorl, two on the columella; peristome chestnut-coloured, rather simple, furnished within with about eight regular small teeth. Length 12, breadth 6 mill. (*Lesson.*)

Auricula (*Conovulus*) *sciuri*, *Lesson, Voy. Coquille*, p. 340. n. 85.

Melampus sciuri, *Beck, Ind.* p. 106. n. 4.

Pfr. Mon. Auric. p. 57.

Hab. Port Praslin, New Ireland.

67. MELAMPUS VIOLA.

Shell ovate-conical, dilated in the middle, perfectly smooth, brownish-violaceous, marked sometimes with two reddish-white bands; spire short, conical; whorls regular, the last slightly keeled above, attenuated in front, marked anteriorly with three or four striæ of growth; aperture elongated, narrow, dilated in front, modified by three parietal and columellar teeth; peristome rather simple, slightly angulated above, furnished within with 4-7 small teeth. Length 12, breadth 7 mill. (*Less.*)

Auricula (*Conovulus*) *viola*, *Lesson, Voy. Coquille*, p. 342. n. 87.
Melampus viola, *Pfr. Mon. Auric.* p. 58.

Hab. Island of Barabora.

3. MARINULA, King.

Shell imperforate, ovate-oblong, rather solid, nearly smooth; spire conic; aperture wide, rather semiovate; columellar lip dilated, flattened or excavated; two convergent parietal plaits; columellar plait smaller, oblique; peristome straight, rather simple.

Marinula, *King in Zool. Journ.* v. p. 343.

Gray in Synops. Br. Mus. 1842, p. 91; and *Proc. Z. S.* 1847, p. 179.

H. and A. Adams in Proc. Z. S. 1854, p. 35.

Pfr. Malak. Bl. 1854, p. 148; *Mon. Auric.* p. 59.

H. and A. Adams, Gen. rec. Moll. ii. p. 246.

Auricula, sp., *Auct.*

Ovatella, sp., *Bivona.*

Melampus, sp., *Lowe.*

Pythia, sp., *Beck.*

Shell similar to that of *Pedipes*, more elongated, destitute of spiral striæ, and differing by the formation of the middle tooth. Besides, the animal has not the transverse groove of the foot, which is an essential character of *Pedipes*.

1. MARINULA PEPITA.

B.M.

Shell imperforate, ovate-oblong, solid, slightly wrinkled, brownish-green, scarcely shining; spire somewhat convexly conical, rather blunt, sometimes eroded; suture linear, whitish; whorls five, scarcely convex, the last forming three-fifths of the total length, with an impressed line below the suture, slightly attenuated at base; aperture scarcely oblique, semiovate, brown

within, modified by three plaits, which are almost equally distant; parietal plaits two, convergent, the upper one the largest; columellar plait dentiform; peristome simple, sharp, with the margins united by a shining deposit; right margin thickened within by a white callus without teeth. Length 14, breadth 7 mill.

Marinula pepita, *King in Zool. Journ.* v. p. 344.

Gray in Proc. Z. S. 1847, p. 179.

H. and A. Adams in Proc. Z. S. 1854, p. 35. n. 1; *Gen. rec.*

Moll. ii. p. 247. pl. 83. f. 2 a.

Pfr. Syn. Auric. n. 60; *Mon. Auric.* p. 59.

Auricula pepita, *Reeve, Conch. Syst.* ii. pl. 187. f. 1.

Küst. Auric. p. 35. t. 5. f. 3-5.

Pythia pepita, *Beck, Ind.* p. 104. n. 9.

Conovulus triplicatus, *Anton, Verzeichn.* p. 48. n. 1779.

Auricula Reclusiana, *Petit in Proc. Z. S.* 1842, p. 201.

Marinula Reclusiana, *H. and A. Adams in Proc. Z. S.* 1854, p. 35. n. 5.

Hab. San Carlos, Chiloë (*King*); River Maule, Chile (*Anton*); Isle of Tumaco, West Columbia (*H. Cuming*).

2. MARINULA ACUTA.

B.M.

Shell fusiform, rather solid, slightly striated, shining, fulvous, irregularly marked with reddish-brown streaks; spire convexly conic, with the apex pointed, sometimes eroded; suture slight, rather simple; whorls six to seven, nearly flat, the last a little longer than the spire, slightly attenuated at base; aperture perpendicular, semiovate; parietal plaits two, compressed, convergent; columellar plait tooth-shaped; peristome simple, straight, with the columellar margin appressed. Length $12\frac{1}{2}$, breadth $5\frac{1}{2}$ mill.

Auricula acuta, *D'Orb. Synops. (in Guér. Mag.* 1835) p. 23. n. 2

Voyage Amérique, p. 326. pl. 42. f. 4-6.

C. B. Adams in Ann. Lyc. New York, 1852, v. p. 432?

Pythia acuta, *Beck, Ind.* p. 104. n. 10.

Alexia acuta, *H. and A. Adams in Proc. Z. S.* 1854, p. 33. n. 5;

Gen. rec. Moll. ii. p. 241.

Alexia acuta, *Pfr. Syn. Auric.* n. 158.

Marinula acuta, *Pfr. Mon. Auric.* p. 60.

Hab. Province of Guayaquil, Columbia (*D'Orb.*); Panama (*Adams*).

3. MARINULA NIGRA.

Shell imperforate, ovate-acuminate, wrinkled, solid, opaque,

blackish; spire inflated, conic, pointed; suture impressed; whorls five and a half, moderately convex, the last forming four-sevenths of the total length, rounded at base; aperture oblique, semioval, modified by three plaits; parietal plaits two, convergent, white, the upper one larger, arcuate; columellar plait dentiform, approximate to the second parietal one; peristome simple, straight, sharp, with the margins united by a shining deposit; right margin furnished sometimes with several very indistinct transverse ridges; columellar margin dilated, flat, callous, shining. Length 9, breadth 5 mill.

Auricula nigra, *Philippi*, *MSS.*

Küst. Auric. Ind. fasc. 30.

Auricula marinella, "*King*," *Küst. Auric.* p. 24. t. 3. f. 4, 5.

Jay, Cat. 1850, p. 265. n. 6517.

Marinula marinella, "*King*," *H. and A. Adams in Proc. Z. S.* 1854, p. 35. n. 3.

Marinula nigra, *Pfr. Syn. Auric.* n. 61; *Mon. Auric.* p. 61.

H. and A. Adams, Gen. rec. Moll. ii. p. 247.

β. Larger; length 10, breadth 6 mill.

γ. With the spire a little more produced, and the whorls more convex.

Auricula Callaoënsis, *Petit, MSS.*

Marinula Callaoënsis, *H. and A. Adams in Proc. Z. S.* 1854, p. 35. n. 4; *Gen. rec. Moll.* ii. p. 247.

Hab. Isle of Chiloë (*Philippi*); Tristan d'Acunha (*H. Cuming*).

4. MARINULA PATULA.

B.M.

Shell imperforate, fusiformly ovate, solid, almost smooth, very minutely striated, slightly shining, fulvous; spire convexly conic, rather mucronate; suture impressed; whorls six, moderately convex, increasing gradually, the last forming nearly two-thirds of the total length, little attenuated at base; aperture oblique, obversely ear-shaped, of the same colour within; parietal plaits two, of which the upper one is strong, linguiform, widely entering, the other smaller, rather transverse, approximate to the columellar plait, which is small and slightly twisted; peristome simple; right margin acute; columellar margin flat, dilated, callous. Length $10\frac{1}{2}$, breadth 6 mill.

Melampus patulus, *Lowe in Zool. Journ.* v. 289.

Pedipes ovulus, *Férussac, Prodr.* p. 109. n. 3?

Pythia patula, *Beck, Ind.* p. 105. n. 14.

Marinula patula, *H. and A. Adams in Proc. Z. S.* 1854, p. 35. n. 2; *Gen. rec. Moll.* ii. p. 247.

Pfr. Syn. Auric. n. 62; *Mon. Auric.* p. 62.

Marinula xanthostoma, *H. and A. Adams in Proc. Z. S.* 1854, p. 35. n. 9; *Gen. rec. Moll.* ii. p. 247.

Hab. Australia (*Lowe*); Moreton Bay (*H. and A. Adams*).

5. MARINULA CYMBÆFORMIS.

Shell imperforate, ovate conic, solid, smooth, shining, whitish-fulvous; spire convexly conoidal, slightly mucronate; suture impressed, narrowly bordered; whorls five, moderately convex, the last forming two-thirds of the total length, inflated above and at base; aperture rather oblique, obversely ear-shaped; parietal plaits two, the upper one strong, tongue-shaped, widely entering, the other smaller, rather transverse, approximate to the columellar plait, which is minute, dentiform; peristome simple; right margin sharp, sinuated above; columellar margin callous, little dilated, slightly excavated. Length 10, breadth 6 mill.

Auricula cymbæformis, *Récluz, MSS.*

Marinula cymbæformis, *H. and A. Adams in Proc. Z. S.* 1854, p. 35. n. 6; *Gen. rec. Moll.* ii. p. 247.

Pfr. Syn. Auric. n. 63; *Mon. Auric.* p. 63.

Hab. Ticao, Philippine Islands.

6. MARINULA FIRMINI.

B.M.

Shell imperforate, fusiformly ovate, solid, marked with rather crowded spiral striæ and dots, brownish-yellow, with paler bands; spire conic, pointed; suture linear; whorls eight, scarcely convex, the last as long as the spire, attenuated, but not compressed at base; aperture scarcely oblique, narrowly semiovate, modified by three almost equal and equidistant dentiform plaits; parietal plaits two, almost parallel to each other; columellar plait slightly twisted; peristome straight, acute, with the margins united by a thin deposit; right margin thickened and callous within; columellar margin reflexed, rather adnate. Length 12, breadth 6 mill.

Auricula Firmini, *Payraudeau, Cat. Moll. Corse*, p. 105. pl. 15. f. 10.

Philippi, Moll. Sicil. i. p. 142.

Deshayes in Encycl. Méth. ii. p. 89. n. 3; and *Lam. Hist.* viii. p. 334. n. 16.

Potiez et Michaud, Gal. Douai, i. p. 203. n. 7.

Küster, Auric. p. 21. 69. t. A. f. 6, t. 2. f. 8-10.

Morelet in Journ. Conch. 1853, iv. p. 293.

Auricula ornata, *Fér. Prodr.* p. 103. n. 11?

Auricula villosa, *Fér. Audouin, Descr. de l'Eg.* xxii. p. 164; *Coq.* pl. 2. f. 23.

Auricula muricata, *Sasso (Beck)*.

Ovatella punctata, *Bivon. Nuov. Gen.* p. 4. t. 2. f. 12.

Melampus Firmini, *Lowe in Zool. Journ.* v. p. 288.

Pythia Ferminii, *Beck, Ind.* p. 104. n. 11.

Marinula punctata, *H. and A. Adams in Proc. Z. S.* 1854, p. 35. n. 7.

Marinula Firmini, *Pfr. Syn. Auric.* n. 64; *Mon. Auric.* p. 63.

Marinula (Monica) Firmini, *H. and A. Adams, Gen. rec. Moll.* ii. p. 247.

Hab. Coasts of Mediterranean Sea; Dalmatia, Sardinia, Corsica, Sicily, Malta, La Calle, Algiers (*Morelet*), Egypt.

The young shells are beset with rows of short hairs.

7. *MARINULA ÆQUALIS*.

Shell imperforate, fusiformly ovate, solid, smooth, chestnut-brownish, with indistinct bands or whitish; spire convexly conic; apex rather obtuse; suture linear, somewhat irregular; whorls seven to eight, flat, the last forming four-sevenths of the total length, attenuated at base; aperture rather oblique, elliptically ovate; parietal plaits two, almost equal, parallel, compressed; columellar plait smaller, rather twisted; peristome simple, sharp; right margin slightly arched; columellar margin dilated, flattened, adnate. Length 10, breadth 5 mill.

Melampus æqualis, *Lowe in Zool. Journ.* v. p. 288. pl. 13. f. 1-5.

Pythia æqualis, *Beck, Ind.* p. 105. n. 12.

Cassidula æqualis, *M. E. Gray, Fig. Moll. Anim.* iv. p. 118. pl. 305. f. 3.

Marinula æqualis, *H. and A. Adams in Proc. Z. S.* 1854, p. 35. n. 8.

Pfr. Syn. Auric. n. 65; *Mon. Auric.* p. 64.

Marinula (Monica) æqualis, *H. and A. Adams, Gen. rec. Moll.* ii. p. 246. pl. 83. f. 2.

Auricula æqualis, *Lowe in Proc. Z. S.* 1854, p. 217.

Hab. North coast of Madeira.

8. *MARINULA GRACILIS*.

Shell slender, narrow, elongately ovate, pointed, smooth; whorls seven and a half, flat, equally enlarging; spire produced, exserted, longer than the aperture; columella three-plaited, the median plait being larger; labrum simple. Length $\frac{1}{4}$, breadth $\frac{1}{8}$ inch (*Lowe*).

Melampus gracilis, *Lowe in Zool. Journ.* v. p. 288.

Marinula gracilis, *Pfr. Syn. Auric.* n. 66; *Mon. Auric.* p. 65.
Marinula (*Monica*) *gracilis*, *H. and A. Adams, Gen. rec. Moll.* ii.
 p. 247.

Auricula (*Melampus*) *gracilis*, *Lowe in Proc. Zool. Soc.* 1854,
 p. 217.

Hab. Near Funchal, Madeira.

This is, as the author himself suspects, perhaps an elongated variety of *Marinula æqualis*.

9. MARINULA? ABBREVIATA.

Pythia abbreviata, *Beck, Ind.* p. 105. n. 13.

Hab. Antilles.

(No further indication, but placed by the author between *Pythia æqualis* and *patula*.)

4. PEDIPES, Adanson.

Shell imperforate, ovate- or globose-conic, solid, striated spirally; whorls few, the last inflated, much larger than the spire; aperture rather semicircular or ellipsoidal, modified by three plaits, of which the parietal one is very large, lamelliform, entering spirally; the two others dentiform, placed on the margin of the flattened columellar lip; peristome sharp, callous, or toothed within.

Animal like that of *Melampus*, except the foot, which is divided into two parts, separated by a transverse groove. The anterior part is broader than long, transverse, rounded anteriorly; the posterior part longer than broad, truncated anteriorly, somewhat attenuated and obtuse posteriorly, short, semi-ovate.

Pedipes (le Piétin), *Adans. Hist. Seneg.* p. 11. pl. 1. f. 4.

Féruss. Prodr. p. 99. 109. et tabl. p. xxxiii.

Blainv. in Dict. Sc. Nat. xxxii. p. 245, xl. p. 288; *Malac.*
 p. 451.

Menke, Syn. p. 32, ed. ult. p. 56.

Rang, Manuel, p. 173.

Lowe in Zool. Journ. v. p. 296.

Deshayes in Encycl. Méth. ii. p. 763, et in *Lam. Hist.* ix.
 p. 42.

Beck, Ind. p. 105.

Bronn, Lethæa, p. 707. 1014.

Pot. et Mich. Gal. Douai, i. p. 206.

Swains. Malac. p. 208. 344.

D'Orbigny, Moll. Cub. i. p. 137. tabl.

Pedipes (le Piétin), *Sow. jun., Conch. Man.* ed. ii. p. 219.

Gray in Syn. Cont. Brit. Mus. 1842, p. 91, *et in Proc. Zool. Soc.* 1847, p. 195.

Herrmannsen, Ind. Gen. Malac. ii. p. 225, *Suppl.* p. 102.

Clark in Ann. & Mag. N. H. 2 ser. vii. p. 472.

Philippi, Handb. d. Conch. p. 253.

Pfeiffer in Zeitschr. f. Malak. 1853, pp. 5, 9; *Malak. Bl.* 1854, p. 148; *Mon. Auric.* p. 65.

H. and A. Adams in Proc. Zool. Soc. 1854, p. 36; *Gen. rec. Moll.* ii. p. 248.

Carassa, Gistel, Naturg. p. 169.

Helix, sp., *Schröt., Gmel., Dillw., Wood.*

Bulimus, sp., *Brug.*

Polydonta, sp., *Fischer.*

Tornatella, sp., *Lam.*

Turbo, sp., *Mühlf.*

Auricula, sp., *Gray, olim, Reeve.*

Although this genus was very exactly observed, named, and perfectly described by Adanson, it was neglected and confounded with various genera by the subsequent writers, until Férussac first restored it to its due rank, and then most recent authors adopted it. It is nearly allied to *Melampus* both by the animal and shell, although easily distinguished by the formation of the foot, and belongs certainly to the amphibious or marine *Auriculidæ*.

The first species was detected by Adanson in the holes of rocks which were most exposed to the raging of the sea round the Isle of Gorée in Senegambia; and several other species have been found in similar localities in various regions. Adanson's description is very exact; but he proposes the question, if Lister's figure (t. 577. f. 32. representing the *Scarabus plicatus* of Férussac) might not be the same species. By this question, and by the singular formation of the mouth in Adanson's magnified figure, Chemnitz was induced to quote it as a synonym of *Helix Scarabæus*, Linn. Schröter first mentioned the *Pedipes* of Adanson as a distinct species of *Helix*, to which Gmelin gave the name of *Helix afra*. Bruguière ascribed it to *Bulimus*; Lamarck to *Tornatella*. Férussac placed the genus *Pedipes* among the family *Auriculidæ*, and enumerated four species. In the same family (only under different names) it was adopted by most recent authors.

Blainville adopted Adanson's genus, but in a different signification, regarding *Tornatella* and *Conorulus* of Lamarck as subgenera of it. However, in the Supplement to his 'Malacology,' he separated *Tornatella* (being an operculated genus) from it.

Menke adopted the genus *Pedipes* in Lamarck's family *Plicacea*. Reeve proposes to reunite it with *Auricula*.

Till the year 1832 all knowledge of the animal was exclusively drawn from Adanson, and then Lowe was the first who confirmed that author's observations. He found the typical species abundantly on the north coast of Madeira under stones, together with two species of *Melampus*, and demonstrated by a series of experiments, that the animals like to live in salt water, and are able to remain above the surface of the water. Yet he does not hesitate to regard them as true *Pectinibranchiata*. The other species, which by analogy are now considered as belonging to *Pedipes*, have not been observed, or at least not described, in the living state.

1. PEDIPES AFER.

Shell imperforate, ovate-conic, solid, sculptured with rather crowded impressed spiral striæ (of which the next to the suture is deeper), rather shining, pale fulvous; spire short, conoidal; apex rather pointed; whorls five, moderately convex, the last forming two-thirds of the total length, rounded at base; aperture nearly diagonal, rather semicircular, furnished with five teeth; parietal plait strong, tooth-shaped, entering spirally near the insertion of the right margin; two acute, equal teeth on the inner margin of the columella, which is flattened, white and shining; peristome sharp, right margin bearing within at its middle part an elongate, transverse plait, and a second smaller one above it. Length $7\frac{2}{3}$, greatest breadth $6\frac{1}{3}$ mill.

Piétin (*Pedipes*), *Adans. Sénég.* p. 11. pl. 1. f. 4.

Helix, no. 263, *Schröt. Einleit.* ii. p. 251.

Helix afra, *Gmel. Syst.* p. 3651. n. 194.

Dillw. Descr. Cat. ii. p. 886. n. 2.

Wood, Ind. pl. 32. f. 2.

Bulinus pedipes, *Brug. in Encycl. Méth.* i. p. 340. n. 73.

Tornatella pedipes, *Lamarck, Hist.* vi. 2. p. 221. n. 6; ed. *Desh.* ix. p. 42.

Pedipes afra, *Fér. Prodr.* p. 109. n. 1.

Lowe in Zool. Journ. v. p. 296. pl. 13. f. 8-12; and in *Proc. Zool. Soc.* 1854, p. 218.

Beck, Ind. p. 105. n. 1.

Pedipes afer, *Pot. et Mich. Gal. Douai*, i. p. 206.

Swains. Malac. p. 344.

Jay, Catal. 1850, p. 265. n. 6181.

M. E. Gray, Fig. Moll. Anim. pl. 305. f. 4, 5.

H. and A. Adams in Proc. Zool. Soc. 1854, p. 36.

Pedipes Adansonii, *Blainv. Malac.* p. 451; *Dict. Sc. Nat.* xl. p. 288.

Pedipes Adansonii, *Desh. in Dict. Class. Hist. Nat.* xiii. p. 544.

Sow. jun., Conch. Man. p. 219. f. 299.

Pedipes afer, *Pfr. Syn. Auric.* n. 67; *Mon. Auric.* p. 68.

H. and A. Adams, Gen. rec. Moll. ii. p. 249. pl. 83. f. 4.

Hab. Isle of Gorée, Senegambia, Palmas, Madeira.

2. PEDIPES MIRABILIS.

Shell imperforate, globose-conic, solid, surrounded with rather crowded, somewhat granular spiral ridges (of which the two next to the suture are larger), silk-shining, brownish-fulvous; spire ventricosely conoidal, rather obtuse; whorls four, convex, the last inflated, forming about two-thirds of the total length; aperture diagonal, oblong, furnished with four plaits; parietal plait regularly arched; columellar teeth minute, acute, the upper one a little larger; peristome acute, with the margins united by a thin deposit; right margin bearing within a longitudinal callus, and above the middle a single, obtuse tubercle; columellar margin callous, flattened, shining. Length 5, breadth 4 mill.

Turbo mirabilis, *Megerle, v. Mühlf. in Mag. Ges. Nat. Freunde, Berl. Jahrg.* viii. 1818, p. 8. pl. 2. f. 13 a, b.

Pedipes mirabilis, *Fér. Prodr.* p. 109. n. 2.

Beck, Ind. p. 105. n. 2.

Pfr. Mon. Auric. p. 70. 197.

Pedipes quadridens, *Pfr. in Wiegmann. Arch. f. Nat.* 1839, i. p. 357.

C. B. Adams, Contr. to Conch. no. 3. p. 42.

Jay, Catal. 1850, p. 266. n. 6184.

Shuttl. Diagn. n. Moll. no. 7. p. 162.

H. and A. Adams in Proc. Zool. Soc. 1854, p. 36. n. 4; *Gen. rec. Moll.* ii. p. 249.

Poey, Memor. i. p. 394.

Pfr. Syn. Auric. n. 68.

Pedipes globulosus, *C. B. Adams in Proc. Bost. Soc.* 1845, p. 12?

Hab. Cuba, Jamaica, Portorico, Guadaloupe.

3. PEDIPES OVALIS.

Shell imperforate, ovate-conical, rather thin, nearly smooth, sculptured with slight spiral striæ, fulvous or wax-coloured; spire convexly conic, rather obtuse; whorls three and a half, shouldered above, obsoletely angulated, the last forming two-thirds of the total length; aperture oblique, semiovate, furnished with four plaits; parietal plait lamelliform, entering; two teeth on the flattened columellar lip; a fourth middle-

sized tooth on the right margin; peristome simple, straight. Length 4, breadth $2\frac{1}{2}$ mill.

Pedipes ovalis, *C. B. Adams, Contrib. to Conch.* no. 3. p. 41.

Jay, Cat. 1850, p. 266. n. 6183.

H. and A. Adams in Proc. Z. S. 1854, p. 36. n. 3; *Gen. rec. Moll.* ii. p. 249.

Pfr. Syn. Auric. n. 69; *Mon. Auric.* p. 70.

Hab. Jamaica.

4. PEDIPES GLOBULUS.

Shell imperforate, ovate-conic, solid, sculptured with close-set spiral furrows, slightly shining, reddish-brown; spire stepped, conic, rather blunt; whorls nearly four and a half, slightly angulated above, the last forming about two-thirds of the total length, attenuated at base; aperture nearly diagonal, oblong, ringent; parietal plait middle-sized; columellar teeth white, acute, rather equal; peristome simple, sharp, right margin bearing within, at its middle, a transverse entering plait. Length 5, breadth 4 mill.

Pedipes globulus, *Petit in Mus. Cuming.*

H. and A. Adams in Proc. Zool. Soc. 1854, p. 36. n. 5.

Pfr. Mon. Auric. p. 71.

Hab. Hayti.

Nearly allied to *P. mirabilis*, but differing in sculpture, in the plait of the peristome, and in its whorls being slightly angulated.

5. PEDIPES ANGULATUS.

Shell imperforate, ovate-conic, solid, sculptured with oblique striæ and close-set unequal spiral ridges, fuscous; spire stepped; apex rather pointed; suture somewhat imbricate; whorls four, slightly angulated above, excavated above the angle, the last forming nearly two-thirds of the total length; aperture rather diagonal, sinuately semicircular; parietal lamella strong; two acute teeth on the margin of the columellar lip, which is broad and concave; peristome sharp, right margin furnished within with a thick callus, forming on the middle a prominent tooth, and interrupted near the angle of insertion. Length $7\frac{1}{3}$, breadth 5 mill.

Pedipes angulata, *C. B. Adams in Ann. Lyc. N. York*, v. p. 431. 542.

H. and A. Adams in Proc. Zool. Soc. 1854, p. 36. n. 2.

Pedipes angulatus, *Pfr. Syn. Auric.* n. 70; *Novit. Conch.* i. p. 24. n. 40. pl. 6. f. 26-28; *Mon. Auric.* p. 71.

H. and A. Adams, Gen. rec. Moll. ii. p. 249.

Hab. Panama.

6. PEDIPES TRIDENS.

Shell imperforate, globose-conic, thin, sculptured with crowded indistinct spiral striæ, dark fuscous; spire turbinate, rather pointed; suture deep, bordered; whorls five, convex, the last inflated, forming three-fifths of the total length; aperture nearly diagonal, rather semicircular; parietal plait middle-sized; columellar lip callous, bearing two distant teeth; peristome simple, sharp, not toothed within. Length $3\frac{3}{4}$, greatest breadth $2\frac{1}{2}$ mill.

Pedipes, no. 467, *Poey, Memor.* i. 394.

Pedipes tridens, *Pfr. in Proc. Zool. Soc.* 1854, p. 122; *Syn. Auric.* n. 71; *Mon. Auric.* p. 72.

H. and A. Adams, Gen. rec. Moll. ii. p. 249.

Hab. Isle of Bermuda.

Doubtful Species.

Pedipes affinis, *Fér. Prodr.* p. 109. n. 4.

Beck, Ind. p. 105. n. 3.

Hab. Isle de France.

This species seems to belong to the genus *Marinula*, and may be identical with *Marinula patula*, Lowe.

Subfam. III. AURICULINÆ.

Terrestrial, living in moist situations. Shell with the peristome expanded or thickened.

Auricula, *Pfr. in Zeitschr. f. Malak.* 1853, p. 9; *Malak. Bl.* 1854, p. 149; *Mon. Auric.* p. 73.

Ellobiinae, *H. and A. Adams, Gen. rec. Moll.* ii. p. 236.

The following genera may be comprised in this subfamily:—*Pythia*, *Plecotrema*, *Cassidula*, *Auricula*, *Alexis*, *Blauneria*?, *Leuconia*, *Carychium*.

5. PYTHIA, Bolten.

Shell depressed ovate; whorls provided on both sides with varices, forming a more or less distinct zigzag streak on the compressed sides; aperture externally wide, narrowed within by a strong columellar, and several strong parietal plaits; right

margin of the peristome furnished within with an oblique dentiferous callus, which usually appears externally.

Pythia, *Bolten*, 1798, *Mus.* p. 105. ed. 2. p. 74.

Link, Rost. Samml. iii. p. 139.

Schumacher, Essai, p. 229.

Mörch, Cat. Yold. p. 37.

Herrmannsen, Ind. Gen. Malac. Suppl. p. 117.

Pfeiffer in Zeitschr. f. Malak. 1853, p. 9; *Malak. Bl.* 1854, p. 149; *Mon. Auric.* p. 73.

H. and A. Adams, Gen. rec. Moll. ii. p. 239.

Polydonta, *Fischer de Waldh.* 1807, *Mus. Demid.* iii.

Beck, Ind. p. 101.

Woodw. Man. Moll. ii. p. 173.

Scarabus, *Montf.* 1810, *Conch. Syst.* ii. p. 306.

Cuvier in Ann. Mus. xix.; *Règne Animal*, 1817, ii. p. 107 : et ed. 2. 1830, et ed. *Voigt*, iii. p. 108.

Leach, Zool. Misc. i. p. 95; ed. *Chenu*, p. 10.

Férussac, Prodr. p. 100, et *Tabl. Syst.* p. xxxiii.

Blainville, Malac. p. 453, et *Diet. Sc. Nat.* xlviii. p. 30.

Menke, Synops. p. 19. ed. ult. p. 35.

Rang, Manuel, p. 174.

Deshayes in Encycl. Méth. iii. p. 934.

Troschel in Wiegman. Arch. f. Nat. 1838, i. p. 202.

Anton, Verzeichn. p. 47.

Sowerby, jun., Conch. Man. p. 95. ed. 2. p. 253.

Swainson, Malac. p. 344.

D'Orbigny, Moll. Cub. i. p. 137.

Reeve, Conch. Syst. ii. p. 107, et *Ann. & Mag. N. H.* ix. p. 218.

Gray in Syn. Cont. Br. Mus. 1842, p. 91, et in *Proc. Z. S.* 1847, p. 179.

Küster in Chemn. ed. nov. i. 16; *Auric.* p. 7.

Catlow, Conch. Nomencl. p. 179.

A. Adams in Proc. Zool. Soc. 1850, p. 147, et in *Ann. & Mag. N. H.* ser. 2. viii. p. 66.

Strigula, *Perry*, 1811, *Conch.* t. 15.

Scarabæa, *Oken*, 1817, *Isis*, p. 1169.

Schweigg. Naturg. p. 742.

Scarabæus, *Blainv.* 1821, in *Journ. Phys.* xciii. p. 304.

Polydonta, *Féruss.* 1829, *Bull.* xix. p. 328.

Herrmannsen, 1848, *Ind. Gen. Malac.* ii. p. 318.

Helix, sp., *Linn.*

Bulinus, sp., *Brug.*

Auricula, sp., *Lam.*

This genus is very distinct from every other by the characters of the shell, and therefore the well-known *Helix Scarabæus* has

appeared to various writers at different times the type of a new genus. The shell, like several other *Auriculidæ*, has the peculiarity of being destitute of the interior septa in the upper whorls, a peculiarity already observed by Chemnitz.

The formation of the umbilicus is extremely different in the various species; in several, which at the same time are distinguished by a more or less triangular shape, it is compressed so as to form only an impressed transverse furrow; in other species it is perfectly closed, in the remaining ones more or less open. By this difference the known species may be divided in the following manner:—

- | | |
|---|---------------|
| A. Umbilicus transversely rimate | § 1. No. 1– 5 |
| B. Umbilicus rather closed | § 2. – 6– 8 |
| C. Openly perforated or umbilicated | § 3. – 9–35 |
| D. Doubtful species | § 4. – 36–37 |

§ 1. *Umbilicus forming a basal impressed furrow.*

1. PYTHIA TRIGONA.

Shell slightly and elongately rimate transversely, much compressed, triangular, granularly striated, horn-coloured yellowish, crowdedly spotted and marbled with chestnut-brown; spire conoidal, rather pointed, angulated on both sides; varices pale, bordered with brown; suture linear; whorls ten, rather flat, the last higher than the spire, very much dilated, sharply keeled on the side opposite to the aperture, angulated at its base; aperture rather semicircular, obliquely effused; parietal plaits three, the upper large, flexuosity triangular, the second thick, entering downwards, the third smaller, approximate to the second; columellar plait compressed, oblique, quite marginal; peristome widely expanded and reflexed, right margin bearing a deeply placed white callus, with five unequal teeth; columellar margin dilated, flattened, spreading. Length 18, greatest breadth 24, least breadth 12 mill.

Scarabus trigonus, *Troschel in Wiegmann's Arch.* 1838, i. p. 207. pl. 4. f. 3.

Reeve in Ann. & Mag. N. H. ix. p. 219. pl. 4. f. 2, et *Conch. Syst.* ii. pl. 183. f. 2.

Küster, Auric. p. 10. t. 1. f. 6.

A. Adams and Reeve, Voy. Samarang, p. 56. pl. 14. f. 12.

A. Adams in Proc. Z. S. 1850, p. 148, et in *Ann. & Mag. N. H.* 2 ser. viii. p. 67.

Pythia trigona, *Mörch, Cat. Yold.* p. 37. n. 767.

Pfr. Syn. Auric. n. 72; *Mon. Auric.* p. 75.

Pythia trigona, *H. and A. Adams, Gen. rec. Moll. ii. p. 240.*

Hab. Putuloz near Bintang (*Troschel*); Borneo (*A. Adams*); Sorsogon, Isle of Luzon (*H. Cuming*).

2. PYTHIA INFLATA.

Shell elongately rimate, compressed globose-conic, rather smooth, dark violaceous-brownish, with irregular white bands and spots; spire short, conoidal, pointed; varices indistinct, not distinguished in colour; whorls seven, rather flat, the last forming three-fourths of the total length, a little descending, inflated; aperture nearly perpendicular, extremely narrow; parietal teeth three, the upper one compressed, almost vertical, the second large, tongue-shaped, curved downwards, the third smaller, approximate to the second; columellar plait compressed, transverse; peristome slightly reflexed, with the margins united by a sinuous callus; right margin provided with deeply placed small teeth, of which three are larger and prominent, narrow near the insertion, much dilated towards the base; columellar margin dilated, spreading. Greatest length 27, greatest breadth 20, least breadth 14 mill.

Pythia inflata, *Pfr. in Zeitschr. f. Malak. 1853, p. 192; Syn. Auric. n. 73; Norit. Conch. i. p. 7. n. 11. pl. 3. f. 3, 4; Mon. Auric. p. 76.*

H. and A. Adams, Gen. rec. Moll. ii. p. 240.

Scarabus plicatus, var., *Metcalf in Proc. Zool. Soc. 1851, p. 72?*

Hab. Isle of Borneo.

3. PYTHIA PLICATA.

Shell elongately and arcuately rimate, not umbilicated, compressed ovate-conic, indistinctly keeled laterally, slightly striate, rather shining, reddish-grey, with violaceous bands, or brownish-violaceous, with irregular pale bands and spots, white anteriorly; spire conic, acute; varices white, not prominent; suture very slight; whorls nine, flat, the last forming nearly three-fifths of the total length, compressed at base; aperture perpendicular, extremely narrow; parietal teeth two, the upper one compressed, acute, vertical, the other larger, tongue-shaped, entering obliquely; columellar plait strong, transverse, somewhat ascending inwards; peristome white, provided within with deeply placed unequal small teeth; right margin slightly sinuate, and scarcely expanded above, much dilated and spreading towards the base; columellar margin slightly thickened, spreading. Greatest length 26, greatest breadth 18, least breadth $13\frac{1}{2}$ mill.

Lister, Hist. pl. 577. f. 32.

(*Klein, Ostrac.* pl. 1. f. 24; *Faranne, Conch.* pl. 65. f. D. 4.)

Helix scarabæus, var., *Chemn. Conch.* ix. 2. p. 182. t. 136. f. 1251-52.

Var. β , *Dillw. Descr. Cat.* ii. p. 886.

Bulimus scarabæus, *A. Brug. in Encycl. Méth.* i. p. 340. n. 74.

Scarabus plicatus, *Fér. Prodr.* p. 101. n. 2.

Lesson, Voy. Coquille, Zool. ii. p. 335. n. 80.

Trosch. in Wieg. Arch. 1838, i. p. 206. t. 4. f. 2.

Reeve in Ann. & Mag. N. H. ix. p. 219. pl. 4. f. 3; *Conch.*

Syst. ii. pl. 188. f. 3.

Küster, Auric. p. 9. t. 1. f. 3, 4.

A. Adams in Proc. Z. S. 1850, p. 148, et in *Ann. & Mag.*

N. H. 2 ser. viii. p. 67.

Scarabus triangularis, *Benson in Journ. As. Soc.* 1836, teste *A. Adams*.

Polydonta plicata, *Beck, Ind.* p. 101. n. 2.

Auricula plicata, *Desh. in Lam. Hist.* viii. p. 339. n. 30.

Pythia plicata, *Mörch, Cat. Yold.* p. 37. n. 768.

Pfr. Syn. Auric. n. 74; *Mon. Auric.* p. 76.

H. and A. Adams, Gen. rec. Moll. ii. p. 240.

Hab. Bengal; Pondicherry (*Desh.*); Jaffna (*Gardner, A. Adams*).

4. PYTHIA CEYLONICA.

Shell transversely rimate, compressed ovate-pyramidal, angled at both sides, striated granularly, dark violaceous or dirty flesh-coloured; spire elongately conic, pointed; varices white; suture linear; whorls ten or eleven, narrow, flat, the last a little longer than the spire, rather dilated towards the base, which is keeled; aperture perpendicular; parietal teeth two, the upper one rather triangular, the other tongue-shaped, angularly entering, rather divided externally; columellar plait strong, slightly ascending inwards; peristome flesh-coloured, provided within with deeply-placed crowded small teeth, of which two are larger; right margin scarcely expanded above, much dilated towards the lower part; columellar margin rather sinuate, thickened, spreading. Length 19, greatest breadth $12\frac{1}{2}$, least breadth $8\frac{1}{2}$ mill.

Pythia Ceylonica, *Pfr. in Zeitschr. f. Malak.* 1853, p. 192; *Syn. Auric.* n. 75; *Mon. Auric.* p. 78.

H. and A. Adams, Gen. rec. Moll. ii. p. 240.

Hab. Ceylon.

5. PYTHIA PETIVERIANA.

Shell transversely rimate, ovate-conic; spire pyramidal, rec-

tilinear, pointed; whorls about nine, flat, the last shorter than the spire, rather inflated; body of the penultimate whorl two-plaited; columella furnished with a single compressed tooth; aperture widely effused anteriorly, narrowed by three middle-sized teeth on the right margin; peristome expanded, much dilated behind the palatal teeth, columellar margin reflexed. Length 24, breadth 14 mill. (*From Petiver's figure.*)

Petiver, Gazophylac. dec. 1. t. 4. f. 10.

Scarabus Petiverianus, Fér. Prodr. p. 101. n. 3 (not of Deshayes, Reeve, Küster, A. Adams).

Troschel in Wiegmann, Arch. f. Nat. 1838, p. 207.

Pythia Petiveriana, Pfr. in Zeitschr. f. Malak. 1853, p. 128; Mon. Auric. p. 78.

Hab. Bengal (Petiver).

§ 2. *Umbilicus rather closed.*

6. PYTHIA LEKITHOSTOMA.

Shell imperforate, broadly ovate-conical, solid, nearly smooth, deeply and distinctly furrowed near the impressed suture, reddish-white, compressed, with chestnut-coloured spots; spire short, conoidal, rather blunt; varices bordered with white; whorls eight to nine, moderately convex, the last one tumid, longer than the spire, very slightly attenuated at its base; aperture perpendicular, ovate, orange-coloured; parietal teeth two, the upper triangular with the upper branch elongated, the other entering, furnished externally with a middle-sized tubercle; columellar plait compressed, ascending obliquely, rather produced externally; peristome orange-coloured, with the margins joined by a thick, shining deposit; right margin slightly arched, simple above, dilated, thickened and wrinkled at its lower half, bearing within three rather equal teeth; columellar margin much thickened, perfectly closing the umbilical region. Length 28, greatest breadth 18, least breadth 14 mill.

Scarabus lekithostoma, Reeve in Ann. & Mag. N. H. 1842, ix. p. 220. pl. 4. f. 6; Conch. Syst. ii. pl. 188. f. 6.

A. Adams in Proc. Zool. Soc. 1850, p. 150; Ann. & Mag. N. H. 2 ser. viii. p. 69.

Scarabus lekithostomus, Küst. Auric. p. 65. t. 9. f. 10.

Pythia lekithostoma, Pfr. Syn. Auric. n. 77; Mon. Auric. p. 79.

H. and A. Adams, Gen. rec. Moll. ii. p. 240.

Hab. — ?

7. PYTHIA PYRAMIDATA.

Shell slightly perforate, ovate-pyramidal, solid, smooth, painted irregularly with fulvous and white; spire elongated, convexly triangular, with the apex rather pointed; whorls eight, scarcely convex, much descending anteriorly, the last shorter than the spire, not attenuated at base; varices bordered with a pale streak, blunt, the last keel-shaped, prominent; aperture scarcely oblique, ovate-roundish, brownish orange-coloured; parietal teeth two, the upper one tooth-shaped, triangular, the other larger, compressed, entering deeply; columellar plait rather quadrangular, ascending obliquely; peristome expanded, thickened and reflexed, with the margins joined by a shining deposit; right margin slightly arcuate, bearing three deeply placed unequal teeth; columellar margin vaulted and reflexed, dilated, rather appressed. Length $26\frac{1}{2}$, greatest breadth 14 mill.

Scarabus pyramidatus, *Reeve in Ann. & Mag. N. H.* ix. p. 221. pl. 4. f. 12 (not of *Küster*, nor *Mousson*); *Conch. Syst.* ii. pl. 188. f. 12.

A. Adams in Proc. Zool. Soc. 1850, p. 149; *Ann. & Mag. N. H.* 2 ser. viii. p. 68.

Pythia pyramidata, *Pfr. Syn. Auric.* n. 78; *Mon. Auric.* p. 79. *H. and A. Adams, Gen. rec. Moll.* ii. p. 240.

Hab. New Ireland (*Hinds*); Salomon's Islands (*D'Urville*).

8. PYTHIA IMPERFORATA.

Shell nearly imperforate, ovate-acuminate, rather thin, nearly smooth, pale yellowish, marked with light chestnut paintings; spire concavely conoidal, with the apex rather blunt, scarcely compressed at both sides, and bearing white varices; suture linear; whorls nine, scarcely convex, striated near the suture, the last forming about three-fifths of the total length, inflated above, attenuated at base; aperture nearly perpendicular, yellowish within; parietal plaits two, the upper one elongate, rather divided, the other very large, entering spirally, duplicate externally; columellar plait oblong, ascending obliquely; peristome expanded, right margin nearly straight above, bearing within five unequal teeth; columellar margin much dilated, vaulted and reflexed, rather appressed. Length 23, greatest breadth 15, least breadth $11\frac{1}{2}$ mill.

Scarabus imperforatus, *A. Adams in Proc. Zool. Soc.* 1850, p. 151; *Ann. & Mag. N. H.* 2 ser. viii. p. 70.

Pythia imperforata, *Pfr. Syn. Auric.* n. 79; *Mon. Auric.* p. 80. *H. and A. Adams, Gen. rec. Moll.* ii. p. 240.

Hab. Isle of Borneo (*A. Adams*).

§ 3. *Umbilicus openly perforated or umbilicated.*

9. PYTHIA REEVEANA.

Shell umbilicate, ovate-conic, solid, sculptured with crowded longitudinal folds, whitish, irregularly conspersed with reddish-brown points and spots, with a yellowish periostraca; spire conoidal, apex rather blunt; suture linear, descending angularly to the varices, which are white, dotted with brown; whorls ten, rather flat, the last a little longer than the spire, irregularly inflated, swollen at base, somewhat compressed near the umbilicus (which sometimes is very narrowly compressed), marked anteriorly with a chestnut-coloured oblique streak; aperture perpendicular, roundish ovate; parietal teeth two, the upper one triangular, the other entering obliquely, rather duplicate externally; columellar plait middle-sized, compressed, nearly transverse; peristome whitish, with the margins united by a thin callus; right margin simple above, dilated and somewhat reflexed at its lower part, bearing within five unequal teeth; columellar margin slightly thickened, spreading. Length 39, greatest breadth $23\frac{1}{2}$, least breadth 19 mill.

Scarabus imbrium, *A. Adams and Reeve, Voy. Samarang*, p. 56. pl. 14. f. 13.

A. Adams in Proc. Zool. Soc. 1850, p. 147; *Ann. & Mag. N. H.* 2 ser. viii. p. 66.

Pythia Reeveana, *Pfr. in Zeitschr. f. Malak.* 1853, p. 190; *Syn. Auric.* n. 80; *Mon. Auric.* p. 81.

H. and A. Adams, Gen. rec. Moll. ii. p. 239. pl. 82. f. 3.

Polydonta scarabæus, *Woodw. Man. Moll.* p. 173. pl. 12. f. 36?

Hab. Philippine Islands (*H. Cuming*); Celebes and Borneo (*A. Adams*).

10. PYTHIA SCARABÆUS.

Shell umbilicate, somewhat rimate, elliptically ovate, rather thin, nearly smooth, arcuately folded near the suture (which is slightly impressed), fulvous, spotted and marbled with chestnut-coloured paintings; spire conic, with the outlines somewhat convex and the apex acute; varices rather compressed, whitish; whorls ten, scarcely convex, the last forming about four-sevenths of the total length, very slightly compressed at base; aperture perpendicular, oblong; parietal teeth two, the upper rather triangular, the other thick, entering, more or less distinctly grooved; columellar plait broad, ascending obliquely inwards; peristome whitish, often painted within with chestnut-colour, bearing four to five unequal teeth; right margin rather simple at its upper part, dilated and somewhat reflexed towards the base; columel-

lar margin dilated, flexuous, spreading. Length 11, greatest breadth 22, least breadth 19 mill.

a. *Perfect form.*

Helix scarabæus, *Linn. Syst.* ed. 10. p. 768. n. 571; *Mus. Lud. Ulr.* p. 663. n. 361; *Syst.* ed. 12. p. 1241. n. 655.

Born, Test. p. 365.

Chemn. Conch. ix. 2. p. 179.

Schröt. Einl. ii. p. 122.

Gmel. Syst. p. 3613. n. 1.

Dillho. Descr. Cat. ii. p. 85. n. 1.

Burr. Elem. t. 20. f. 1?

Helix pythia, *Müll. Hist. Verm.* ii. p. 88. n. 286.

Pythia helicina, *Bolt. Mus.* p. 105. n. 1346. ed. nov. p. 74. n. 1319.

Pythia rictans, *Schum. Essai*, p. 229.

Pythia imbrium, *Mörch, Cat. Föld.* p. 37. n. 771.

Pythia scarabæus, *Pfr. in Z. f. M.* 1853, p. 127; *Syn. Auric.* n. 81; *Mon. Auric.* p. 82.

H. and A. Adams, Gen. rec. Moll. ii. p. 239. pl. 82. f. 3 a.

Bulimus scarabæus, *B. Brug. in Encycl. Méth.* i. p. 340.

Scarabus imbrium, *Montf. Conch. Syst.* ii. p. 307.

Férussac, Prodr. p. 101. n. 1.

Blainv. in Dict. Sc. Nat. v. 48. p. 31.

Less. Voy. Coquille, p. 333. n. 78. pl. 10. f. 5.

Leach, Zool. Misc. i. p. 96. pl. 42.

Troschel in Wiegman. Arch. 1838, i. p. 204. t. 4. f. 1.

Pot. et Mich. Gal. Douai, i. p. 207.

Sow. Conch. Man. f. 299*.

Reeve in Ann. & Mag. N. H. ix. p. 220. pl. 4. f. 11; *Conch.*

Syst. ii. t. 188. f. 11.

M. E. Gray, Fig. Moll. Anim. pl. 306. f. 3.

Scarabus Lessonii, *Blainv. in Dict. Sc. Nat.* v. 48. p. 32.

Lesson, Voy. Coquille, ii. p. 334. pl. 10. f. 4.

Oken, Isis, 1833, t. 1. f. 4.

Reeve in Ann. & Mag. N. H. ix. p. 220. pl. 4. f. 5, 8; *Conch.*

Syst. ii. pl. 188. f. 5, 8.

Küst. Auric. p. 66. t. 9. f. 11, 12.

A. Adams in Proc. Zool. Soc. 1850, p. 147; *Ann. & Mag.*

N. H. 2 ser. viii. p. 67.

Auricula scarabeus, *Lam. Hist.* vi. 2. p. 139. n. ed. 6.

Desh. in Lam. Hist. viii. p. 327.

Auricula Petiveriana, *Desh. in Lam. Hist.* ed. nov. viii. p. 339. n. 29.

Polydonta Listeriana, *Beck, Ind.* p. 102. n. 6.

Polydonta Lessoni, *Beck, Ind.* p. 102. n. 8.

Scarabe austral, *Chenu, Leç. Elém.* p. 244. f. 910, 911.

Lister, Hist. pl. 577. f. 31.

β. *Imperfect form, with the labrum not expanded.*

Rumph. Amboin. p. 91. t. 27. f. 1.

Gualt. Test. t. 4. f. S.

Knorr, Vergnüg. vi. t. 19. f. 2, 3.

Helix scarabæus, Chemn. Conch. ix. t. 136. f. 1249, 1250, 1253.

Wood, Ind. pl. 32. f. 1.

Scarabus imbrium, Blainv. in Dict. Sc. Nat. Pl. Moll. 54. f. 5.

Küst. Auric. p. 8. t. 1. f. 1, 2, 5.

Guér. Icon. Moll. p. 17. pl. 7. f. 6.

Polydonta imbrium, Beck, Ind. p. 102. n. 7.

Hab. Moluccas, New Ireland, and New Hebrides.

11. PYTHIA VERREANÆI.

Shell imperforate, elliptically ovate, solid, nearly smooth, marked with deep arched striæ near the suture; spire conoidal, rather pointed, blackish; varices blunt, with a whitish streak behind the margin, which is black; whorls ten, flat, the last forming about three-fifths of the total length, rather descending anteriorly, blackish chestnut-coloured above and anteriorly, fulvous with brown spots on the remaining parts; aperture perpendicular, narrow; parietal teeth two, greyish white, the upper triangular, slightly divided, the other entering obliquely, slightly duplicate externally; columellar plait broad, quadrangular, ascending obliquely; peristome blackish, with the margin pale, slightly reflexed; right margin rather rectilinear, furnished within with a thick callus bearing five to six unequal teeth; columellar margin thick, dilated, quite adnate. Length 30, greatest breadth 17, least breadth $13\frac{1}{2}$ mill.

Pythia Verreanæi, Pfr. in Malak. Bl. iii. 1856, p. 173.

Hab. —?

12. PYTHIA HEPATICA.

Shell imperforate, ovate-conic, rather solid, smooth, very slightly striated near the suture, violaceous or brownish; spire conoidal, rather pointed; varices blunt, marked with an oblique white streak; whorls eight, flat, the last widely descending, scarcely longer than the spire, slightly attenuated at base; aperture large, perpendicular, livid flesh-coloured within, as also the teeth; parietal teeth two, the upper flexuous and divided, the other compressed, slightly descending; columellar plait tongue-shaped, ascending obliquely; peristome dirty orange-coloured, thickened, with the margins united by a thick, shining callus; right margin sinuated above, furnished within with a broad callus bearing three unequal teeth; columellar

margin much thickened, perfectly adnate. Length 24, greatest breadth 15, least breadth 11 mill.

Pythia hepatica, *Pfr. in Malak. Bl.* iii. 1856, p. 174.

Hab. — ?

13. PYTHIA NIGRICANS.

Shell imperforate, ovate-conic, solid, smooth, almost imperceptibly striated near the suture, rather uniformly blackish; spire conic, with slightly convex outlines and the apex pointed; varices blunt, with obsolete pale borders; whorls nine, rather flat, the last deeply descending, about as long as the spire; aperture slightly oblique, semioval; parietal teeth two, the upper arched, the other simple, compressed, deeply entering; columellar plait tongue-shaped, oblique, produced externally to the margin; peristome fulvous-livid, with the margins united by a thin callus; right margin regularly arched, slightly reflexed, furnished within with a callus, bearing six unequal teeth, of which the two upper ones, the fourth and sixth, are smaller; columellar margin thick, adnate. Length 21, greatest breadth $12\frac{1}{2}$, least breadth 10 mill.

Pythia nigricans, *Pfr. in Malak. Bl.* iii. 1856, p. 174.

Hab. — ?

14. PYTHIA ABBREVIATA.

Shell subglobose, depressed, with the spire short; whorls folded only at their upper margin, and smooth in the remaining part; aperture very narrow, and angularly prolonged anteriorly, where the right and left margins are united; plaits and teeth much approximated; upper columellar plait bearing a single tooth anteriorly; on the right margin there are three principal teeth, and three intermediate ones, which form a line, not entering deeply. Colour dirty white, finely marbled with brown; side of the right margin whitish, with chestnut-coloured spots, forming on each side of the spire a stairlike white line, which is bordered with brown. Length 9, breadth 6 lines (*Blainv.*).

Scarabus abbreviatus, *Blainv. in Dict. Sc. Nat.* v. 48. p. 31.

Polydonta abbreviata, *Beck, Ind.* p. 101. n. 5 ?

Pythia abbreviata, *Pfr. Mon. Auric.* p. 85.

Hab. Marion de Proce (a small isolated island of the Indian Ocean).

15. PYTHIA INSULARIS.

Shell subumbilicated, compressed, greyish-brown, with white

spots; whorls regular, the upper ones marked with flexuous striae, which are obsolete at the lower part; last whorl forming two-thirds of the total length; aperture dilated, rounded in front; parietal plaits two, the upper one rather longitudinal, rather prominent, the other divided; columellar plait lamelliform; peristome furnished with three strong teeth, and several smaller ones towards the base. Length 35, breadth 20 mill.

Scarabus insularis, *Hombr. et Jacq. Voy. Pole Sud, Zool.* v. p. 40. pl. 10. f. 15-17.

Pythia insularis, *Pfr. Mon. Auric.* p. 85.

Hab. Salomon's Islands.

16. PYTHIA POLLEX.

Shell umbilicated, conically ovate, solid, striated and wrinkled longitudinally, greenish chestnut-coloured, often with two yellowish bands at the upper part; spire conoidal, rather blunt, slightly angulated on both sides; varices indistinct, marked with a single yellow spot; suture scarcely impressed; whorls nine, rather flat, folded arcuately near the suture, the last forming three-fifths of the total length, rather compressed round the open umbilicus; aperture perpendicular, rather broad; parietal plaits two, the upper one dentiform, the other compressed, transverse; columellar plait lunate, scarcely ascending; peristome expanded and slightly reflexed, flesh-coloured, varied with brown; right margin bearing within two larger and five to six minute teeth; columellar margin short, much dilated, spreading. Length 40, greatest breadth 25, least breadth 18 mill.

Scarabus pollex, *Hinds in Ann. Nat. Hist.* x. p. 82.

Hinds in Voy. Sulphur, Zool. p. 60. pl. 16. f. 9, 10.

A. Adams in Proc. Zool. Soc. 1850, p. 150; *Ann. & Mag. N. H.* 2 ser. viii. p. 69.

Scarabus zonatus, *Hombr. et Jacq. Voy. Pole Sud, Zool.* v. p. 41. pl. 10. f. 18-20.

Pythia pollex, *Pfr. Syn. Auric.* n. 82; *Mon. Auric.* p. 86.

H. and A. Adams, Gen. rec. Moll. ii. p. 240.

Hab. Feejee Islands.

17. PYTHIA COSTULATA.

Shell umbilicated, large, ovately conic, rather pointed, depressed, slightly ribbed transversely, fulvous, indistinctly spotted with brown; spire triangular, flat; aperture arcuate; peristome expanded, with five teeth within; columella bearing three plaits; whorls eight. Height 16, breadth $9\frac{1}{2}$ lines (*Küst.*).

Scarabus costulatus, *Küst. Auric.* p. 67. t. 9. f. 13.

Pythia costulata, *Pfr. Syn. Auric.* n. 83; *Mon. Auric.* p. 87.

Hab. East Indies.

18. PYTHIA ALBOVARICOSA.

Shell rimately umbilicated, oblong-conic, rather solid, smooth, imperceptibly striated near the linear suture, rather uniformly greenish chestnut-coloured; spire conic, with the apex rather blunt; varices broadly bordered with white, and more narrowly with blackish-brown; whorls ten, flat, the last forming four-sevenths of the total length, attenuated anteriorly, compressed near the umbilicus, which is not perfectly open; aperture perpendicular, ovate, fulvous-whitish within; parietal teeth two, deep, the upper one conic, the other entering obliquely, grooved externally; columellar plait ascending rather obliquely; peristome slightly reflexed; right margin narrow on its upper part, much dilated towards the base, bearing within five teeth, of which the third and fifth are stronger; columellar margin much dilated, flexuous, spreading. Length 44, greatest breadth 23, least breadth $18\frac{1}{2}$ mill.

Pythia albovaricosa, *Pfr. in Zeitschr. f. Malak.* 1853, p. 190; *Syn. Auric.* n. 84; *Novit. Conch.* i. p. 6. n. 10. t. 3. f. 1, 2; *Mon. Auric.* p. 87.

H. and A. Adams, Gen. rec. Moll. ii. p. 240.

Hab. Celebes.

19. PYTHIA CHALCOSTOMA.

Shell umbilicated, elliptical, pyramidal, rather solid, slightly striated with minute folds near the linear suture, rather shining, pale yellow, varied with reddish-brown paintings; spire elevately conic, attenuated towards the apex, which is acute; varices broad, white; whorls thirteen, rather flat, the last a little longer than the spire, indistinctly compressed near the narrow umbilicus; aperture rather oblique, ovate, fulvous-greyish; parietal teeth two, the upper one broadly triangular, divided, the other large, compressed, shortly duplicated externally; columellar plait square, ascending almost vertically; peristome fulvous, reflexed, with the margins united by a thin deposit; right margin narrow and sinuated above, dilated at its lower part, bearing within five teeth, the two first and the fourth of which are minute, the third and fifth thick, rounded; columellar margin slightly thickened, spreading. Length 38, greatest breadth 19, least breadth 15 mill.

Scarabus chalcostomus, *A. Adams in Proc. Zool. Soc.* 1850, p. 152; *Ann. & Mag. N. H.* 2 ser. viii. p. 70.

Pythia chalcostoma, *Pfr. Syn. Auric.* n. 85; *Mon. Auric.* p. 87.
H. and A. Adams, Gen. rec. Moll. ii. p. 240.

Hab. Salomon's Islands (*D'Urville*).

20. PYTHIA OVATA.

Shell deeply rimate or openly umbilicated, compressedly ovate, acuminate, rather solid, slightly striated, pale, shadowed with livid spots and marbled with chestnut-coloured paintings; spire conic, with somewhat convex outlines, and the apex pointed; varices white, with an adjacent blackish-brown spot of the same breadth, which does not reach the suture; whorls ten, rather flat, descending anteriorly, arcuately folded near the suture, the last a little longer than the spire, slightly compressed at base; aperture perpendicular, whitish within; parietal teeth two, the upper triangular, with two branches, the other strong, simple, descending obliquely; columellar plait compressed, oblique; peristome pale livid, with the margins united by a thin, shining deposit; right margin rather simple above, then thickened, reflexed, furnished within with a white callus, bearing five unequal teeth; columellar margin much dilated, spreading. Length 31, greatest breadth 26, least breadth $23\frac{1}{2}$ mill.

Pythia ovata, *Pfr. in Proc. Zool. Soc.* 1854, p. 299; *Mon. Auric.* p. 88.

H. and A. Adams, Gen. rec. Moll. ii. p. 240.

Hab. —?

21. PYTHIA CELEBENSIS.

Shell narrowly umbilicate, ovate-conic, solid, striated irregularly, rather uniformly dark fulvous; spire conic, with the apex pointed; varices fulvous-yellow; whorls ten, rather flat, descending anteriorly, with strong arched folds near the suture, last whorl about as long as the spire, slightly compressed at base; aperture rather oblique, of a livid flesh-colour and shining within; parietal teeth two, the upper rather trigonal, the other strong, compressed, somewhat oblique; columellar plait small, rather tooth-shaped, ascending arcuately; peristome bordered with livid, with the margins united by an extremely thin deposit; right margin rather simple above, then narrowly expanded and somewhat reflexed, furnished within with a broad flesh-coloured callus bearing five unequal teeth; columellar margin thick, sinuate, spreading. Length 33, greatest breadth 18, least breadth 15 mill.

Pythia celebensis, *Pfr. in Proc. Zool. Soc.* 1854, p. 299; *Mon. Auric.* p. 89.

H. and A. Adams, Gen. rec. Moll. ii. p. 240.

Hab. Isle of Celebes.

22. PYTHIA CUMINGIANA.

Shell shortly and deeply rimate, ovate-triangular, rather solid, marked with slightly wrinkled longitudinal striæ, yellowish-brown; spire convexly conic, with the apex acute; varices bordered with white, the upper ones indistinct, the last ones strongly prominent; whorls nine, scarcely convex, the last forming four-sevenths of the total length, bag-shaped at base, very slightly compressed; aperture rather oblique, truncately ovate; parietal teeth two, large, the upper one elongate, descending from the angle of insertion, rather truncate anteriorly, the other tongue-shaped, arcuately descending inwards, thickened externally by a short tubercle; columellar plait compressed, nearly horizontal; peristome much thickened and reflexed, with the right margin cut out above, sinuated, dilated at its lower part, furnished within with four or five teeth, three of which are stronger; columellar margin convex, spreading. Length 30, greatest breadth 19, least breadth 15 mill.

Scarabus Cumingianus, Petit in Proc. Zool. Soc. 1843, p. 3.

Küster, Auric. p. 63. t. 9. f. 5, 6.

A. Adams and Reeve in Voy. Sumarang, p. 56. pl. 14. f. 16.

A. Adams in Proc. Zool. Soc. 1850, p. 150; *Ann. & Mag.*

N. H. 2 ser. viii. p. 68.

Pythia Cumingiana, Pfr. Syn. Auric. n. 86; *Mon. Auric.* p. 89.

H. and A. Adams, Gen. rec. Moll. ii. p. 240.

Hab. Philippine Islands, Zebu and Negros (*H. Cuming*).

23. PYTHIA UNDATA.

Shell subumbilicate, compressedly ovate, solid, crowdedly sculptured with longitudinal waving folds, opaque, greenish-brown; spire conoidal, acuminate, with the varices scarcely prominent, forming a whitish zigzag streak; suture linear, very irregular; whorls nine, the upper ones flattened, the last forming two-thirds of the total length, more convex, slightly attenuated in front; aperture perpendicular, narrow; parietal plaits two, strong, the upper one triangular, divided, the other tooth-shaped, curved downwards, doubled externally; columellar plait rather square; peristome widely expanded, slightly reflexed; right margin bearing four deeply-placed teeth; columellar mar-

gin dilated, sinuate, spreading. Length $24\frac{1}{2}$, greatest breadth 15, least breadth 12 mill.

Scarabus undatus, Lesson, *Voy. Coquille*, Zool. ii. p. 336. pl. 10. f. 6.

Reere in *Ann. & Mag. N. H.* ix. p. 219. pl. 4. f. 4; *Conch.*

Syst. ii. pl. 188. f. 4.

Küster, *Auric.* p. 65. t. 9. f. 8, 9.

A. Adams in *Proc. Zool. Soc.* 1850, p. 149; *Ann. & Mag.*

N. H. 2 ser. viii. p. 68.

Auricula scarabeus, var., Desh. in *Lam. Hist. nouv.* ed. 8. p. 328.

Polydonta abbreviata, Beck, *Ind.* p. 101. n. 5 ?

Pythia undata, Pfr. *Syn. Auric.* n. 87; *Mon. Auric.* p. 90.

H. and A. Adams, *Gen. rec. Moll.* ii. p. 240.

Hab. Isle of Waygeeo.

24. PYTHIA CASTANEA.

Shell shortly and deeply rimate, rather umbilicate, compressedly oblong-conic, rather solid, slightly striated longitudinally, with distinct arcuate striæ near the suture, almost uniformly violaceous-brown, with a zigzag streak on the compressed sides, formed by the varices, which are white, bordered with chestnut-brown; spire conic, rather blunt; suture impressed; whorls nine, rather flat, the last a little longer than the spire, compressed near the umbilical groove; aperture nearly perpendicular, narrow; parietal teeth two, the upper one triangular, acute, the other compressed, entering deeply, shortly doubled exteriorly; columellar plait white, middle-sized, ascending slightly and obliquely; peristome white, slightly reflexed, with the margins united by a thin deposit; right margin bearing a deep white callus, and five rather equal small teeth; columellar margin broadly spreading, shortly reflexed. Length 26, greatest breadth 15, least breadth 12 mill.

Scarabus castaneus, Lesson, *Voy. Coquille*, Zool. ii. p. 336. pl. 10. f. 7.

Reere in *Ann. & Mag. N. H.* ix. p. 220. pl. 4. f. 10; *Conch.*

Syst. ii. pl. 188. f. 10.

Küster, *Auric.* p. 61. t. 9. f. 1, 2.

A. Adams in *Proc. Zool. Soc.* 1850, p. 150; *Ann. & Mag.*

N. H. 2 ser. viii. p. 69.

Polydonta castanea, Beck, *Ind.* p. 101. n. 4.

Auricula scarabeus, var., Desh. in *Lam. Hist. nouv.* ed. viii. p. 328.

Pythia castanea, Mörch, *Cat. Föld.* p. 37. n. 769.

Pfr. *Syn. Auric.* n. 88; *Mon. Auric.* p. 91.

H. and A. Adams, *Gen. rec. Moll.* ii. p. 240.

Hab. Waygeeo (Less.); Moluccas (Beck); Isle of Zebu (H. Cuming).

25. *PYTHIA SINUOSA*.

Shell with the umbilicus more or less covered, compressedly ovate-conic, rather thin, sculptured with rather regular longitudinal striæ and distant transverse impressed lines, horn-coloured fulvous, conspersed with dark brown spots; spire convexly conic, pointed; varices angular, whitish; suture linear; whorls nine, flat, the last forming three-fifths of the total length, compressed and somewhat bag-shaped in front; aperture semioval; parietal plaits three, the upper one vertical, flexuous, terminating in the shape of a tooth, the second large, tongue-shaped, the third, which is smaller, touching the second; columellar plait scarcely ascending, produced externally; peristome slightly reflexed; right margin bearing three rather equal teeth; columellar margin sinuate, much dilated, vaulted and reflexed, so as to cover the largest part of the umbilicus. Length 23, greatest breadth $13\frac{1}{2}$, least breadth 10 mill.

Scarabus sinuosus, *A. Adams in Proc. Z. S.* 1850, p. 151; *Ann. & Mag. N. H.* 2 ser. viii. p. 69.

Pythia sinuosa, *Pfr. Syn. Auric.* n. 89; *Mon. Auric.* p. 92.

H. and A. Adams, Gen. rec. Moll. ii. p. 240.

Hab. Isle of Negros, Philippines (*H. Cuming*).

26. *PYTHIA SEMISULCATA*.

Shell umbilicate, ovate-pyramidal, rather thin, smooth, sculptured with deep longitudinal furrows near the linear suture, slightly shining, dark chestnut-coloured, with a black band below the suture; spire pyramidal, apex rather pointed; varices narrowly bordered with white; whorls nine, rather flat, the last about as long as the spire, compressed and wrinkled round the open umbilicus; aperture rather oblique, roundish-ovate, yellowish; parietal teeth two, the upper one triangular, the other compressed, entering, rather doubled externally; columellar plait tongue-shaped, arcuately ascending obliquely; peristome slightly reflexed; right margin rather cut out at its upper part, dilated towards the lower part, bearing within four to five deeply-placed small teeth, two of which are larger; columellar margin much dilated, thickened, excavated, spreading. Length 27, greatest breadth 14, least breadth 11 mill.

Scarabus semisulcatus, *A. Adams in Proc. Z. S.* 1850, p. 151; *Ann. & Mag. N. H.* 2 ser. viii. p. 69.

Pythia semisulcata, *Pfr. Syn. Auric.* n. 90; *Mon. Auric.* p. 93.

H. and A. Adams, Gen. rec. Moll. ii. p. 240.

Hab. — ?

A very distinct species, most similar in shape to *P. pyramidata*, Reeve (not of other authors).

27. PYTHIA STRIATA.

Shell rimate, slightly perforate, ovate-triangular, rather thin, striated longitudinally, little shining, yellowish, irregularly conspersed with reddish-brown spots; spire regularly conic, with the apex pointed; varices indistinct, bordered with a pale streak; whorls ten, flat, the last forming three-fifths of the total length, rather attenuated in front, much compressed near the umbilical groove, which is short and deep; aperture nearly perpendicular, roundish-ovate; parietal teeth two, the upper triangular, the other tongue-shaped, descending obliquely; columellar plait compressed, rather transverse; peristome whitish, with the margins united by a thin callus; right margin straight and thin above, then dilated and expanded, bearing within four to five teeth, of which two or three are larger, and the intermediate ones sometimes bifid; columellar margin dilated, spreading, rather angularly flexuous, slightly reflexed. Length 24, greatest breadth 15, least breadth 12 mill.

Scarabus striatus, *Reeve in Ann. & Mag. N. H.* ix. p. 220. pl. 4.

f. 9; *Conch. Syst.* ii. pl. 188. f. 9.

Küster, Auric. p. 64. t. 9. f. 7.

A. Adams in Proc. Z. S. 1850, p. 148; *Ann. & Mag. N. H.* 2 ser. viii. p. 67.

Auricula scarabæus, *Quoy et Gaim. Voy. Astrol.* ii. p. 162. pl. 13. f. 24.

Pythia striata, *Pfr. Syn. Auric.* n. 91; *Mon. Auric.* p. 94.

H. and A. Adams, Gen. rec. Moll. ii. p. 240.

Hab. Indian Archipelago (*Quoy*); San Nicholas, Island of Zebu (*H. Cuming*).

28. PYTHIA PANTHERINA.

Shell perforate, ovate, somewhat elliptical, rather solid, slightly striated, yellowish, conspersed irregularly with chestnut-coloured dots; spire conic, with a somewhat curved outline, and the apex rather blunt; varices bordered with white and blackish; whorls nine to ten, scarcely convex, much striated arcuately near the suture, which is linear; last whorl a little longer than the spire, marked anteriorly with an oblique blackish streak, attenuated, but rather compressed at base; aperture nearly perpendicular, truncately ovate; parietal teeth two, the upper one triangular, rather divided, the other strong, compressed, slightly grooved externally; columellar plait slightly ascending, produced outwards; peristome pale, marked often with slight

reddish-brown striæ; right margin straight above, then dilated and expanded, bearing within five teeth, of which three are stronger; columellar margin broad, spreading, scarcely flexuous. Length 28, greatest breadth 17, least breadth $13\frac{1}{2}$ mill.

Scarabus pantherinus, *A. Adams in Proc. Z. S.* 1850, p. 152; *Ann. & Mag. N. H.* 2 ser. viii. p. 70.

Scarabus pyramidatus, *Küst. Auric.* p. 62. t. 9. f. 3, 4; *Mouss. Jav. Moll.* p. 49. t. 5. f. 10.

Pythia pantherina, *Pfr. Syn. Auric.* n. 92; *Mon. Auric.* p. 94.
H. and A. Adams, Gen. rec. Moll. ii. p. 240.

β. Chestnut-coloured, with pale spots.

Scarabus Petiverianus, *Reeve in Ann. & Mag. N. H.* ix. p. 220. pl. 4. f. 7?; *Conch. Syst.* ii. pl. 188. f. 7?

Küst. Auric. p. 11. t. 1. f. 7?

A. Adams in Proc. Z. S. 1850, p. 148?; *Ann. & Mag. N. H.* 2 ser. viii. p. 67.

γ. Smaller, pale, more slender.

Hab. Philippine Islands (*H. Cuming*); Java (*Zollingen*); Borneo (*A. Adams*); Celebes.

29. PYTHIA BORNEENSIS.

Shell with a short and deep umbilical furrow, rather perforate, conically ovate, solid, very minutely decussated, yellowish-brown, with irregular chestnut-coloured bands and striæ; spire convexly conoidal, rather acuminate; varices yellow, not prominent; suture rather regular, impressed; whorls eight to nine, rather flat, the last forming two-thirds of the total length, more convex, rather swollen at base, compressed anteriorly; aperture perpendicular, narrow; parietal teeth three, the upper one triangular, acute, the longer side perpendicular, the shorter oblique, the second tongue-shaped, descending inwards, the third minute, parallel with the second; columellar plaits two, the one vertical, straight, the other lunate, rather ascending; peristome livid, the right margin bearing far within an oblique callus, with five to six irregular teeth, scarcely reflexed above, widely expanded and effused at its lower part; columellar margin dilated, spreading. Length $23\frac{1}{2}$, greatest breadth 14, least breadth 11 mill.

Scarabus Borneensis, *A. Adams in Proc. Z. S.* 1850, p. 152; *Ann. & Mag. N. H.* 2 ser. viii. p. 70.

Pythia Borneensis, *Pfr. Syn. Auric.* n. 93; *Mon. Auric.* p. 95.
H. and A. Adams, Gen. rec. Moll. ii. p. 240.

Hab. Borneo (*Taylor*).

30. *PYTHIA ARGENVILLEI*.

Shell slightly perforate, elliptical, rather thin, scarcely striate, pale fulvous, sprinkled with chestnut points and spots; spire elongate, slender, conic, with concave outlines, and the apex rather pointed; varices indistinct, spotted with white; whorls ten to eleven, rather flat, more distinctly striated near the linear suture, scarcely descending anteriorly, the last about as long as the spire, attenuated and compressed in front; aperture nearly perpendicular, narrowly semioval; parietal teeth two, the upper triangular, somewhat divided, the other strong, compressed, entering, somewhat duplicate externally; columellar plait strong, rather thickened, imperceptibly ascending; peristome acute; right margin straight at its upper part, slightly expanded below the middle, bearing within three unequal teeth; columellar margin dilated, reflexed, almost covering the umbilicus. Length 26, greatest breadth 13, least breadth $9\frac{1}{2}$ mill.

Pythia Argenvillei, *Pfr. in Zeitschr. f. Malak.* 1853, p. 191; *Syn. Auric.* n. 94; *Mon. Auric.* p. 96.

H. and A. Adams, Gen. rec. Moll. p. 240.

D'Argenville, Conch. t. 9 (12). *f. T.*

β . Smaller, pale greyish horn-coloured, with few spots; varices brown-bordered. Length 22, greatest breadth 12 mill.

Hab. North coast of Australia.

31. *PYTHIA MACGILLIVRAYI*.

Shell subperforate, elliptical, acuminate, thinish, nearly smooth, black: spire elongated, conic, with the outlines rather concave, and the apex pointed; varices white, slightly spotted with brown points; whorls nine, flat, arcuately striated near the suture, much descending anteriorly, the last scarcely longer than the spire, attenuated at base; aperture nearly perpendicular, extremely narrow; parietal teeth two, the upper small, trigonal, the other compressed, entering, simple; columellar plait thin, compressed, ascending arcuately; peristome sharp; right margin straight above, slightly expanded below the middle, bearing within two nearly equal teeth; columellar margin dilated, closing partially or completely the umbilicus. Length 24, greatest breadth 11, least breadth 9 mill.

Pythia Macgillivrayi, *Pfr. in Proc. Zool. Soc.* 1854, p. 298; *Mon. Auric.* p. 97.

H. and A. Adams, Gen. rec. Moll. ii. p. 240.

Hab. Isle of Aneiteum, New Hebrides (*Macgillivray*).

32. PYTHIA CECILLEI.

Shell rimately perforate, ovate-oblong, scarcely compressed, slightly wrinkled longitudinally, horn-coloured, usually with brown bands; spire conic, acute, with the varices indistinct, whitish; suture linear; whorls seven, flat, the last forming scarcely two-fifths of the total length, rather compressed, and somewhat swollen at base; aperture semiovate, rounded in front; parietal plaits two, the upper triangular, dentiform, the other tongue-shaped, entering, bearing externally a very minute tubercle; columellar plait single, ascending obliquely; peristome slightly thickened; right margin sinuate above, furnished within with two teeth and a callus, which descends from them; columellar margin dilated, spreading, bearing a perpendicular plait. Length 20, greatest breadth 11, least breadth 9 mill.

Scarabus Cecillei, *Philippi in Zeitschr. f. Malak.* 1847, p. 122.

A. Adams in Proc. Z. S. 1850, p. 149; *Ann. & Mag. Nat. Hist.* 2 ser. viii. p. 68.

Pythia Cecillei, *Pfr. Syn. Auric.* n. 95; *Mon. Auric.* p. 98.

H. and A. Adams, Gen. rec. Moll. ii. p. 240.

Hab. China (*Cecille*).

33. PYTHIA ACUTA.

Shell olive-shaped, compressed, smooth, greyish; spire acute; aperture rounded in front; right margin strongly twisted at base, and furnished with two thick, divided teeth; left margin thickened towards the base, bearing two lamellar teeth. Length 22, breadth 12 mill. (*Rousseau*).

Scarabus acutus, *Hombr. & Jacq. Voy. Pôle Sud, Zool.* v. p. 39. pl. 10. f. 1-3.

Pythia acuta, *Pfr. Mon. Auric.* p. 98.

Hab. Hogolen Islands.

34. PYTHIA VARIABILIS.

Shell compressedly ovate, varying in colour, pale grey or dark brown; aperture furnished on both sides with three strong and irregular teeth. Length 25, breadth 15 mill. (*Rousseau*).

Scarabus variabilis, *Hombr. & Jacq. Voy. Pôle Sud, Zool.* v. p. 39. pl. 10. f. 4-11.

Pythia variabilis, *Pfr. Mon. Auric.* p. 98.

Hab. New Guinea and Arrow Islands.

35. PYTHIA CRASSIDENS.

Shell small, similar to the preceding species, smooth, uni-

formly greyish; aperture furnished with three stronger teeth on both sides; left margin thicker; mouth more contracted. Length 19, breadth 11 mill. (*Rousseau*).

Scarabus crassidens, *Hombr. & Jacq. Voy. Pôle Sud, Zool.* v. p. 40. pl. 10. f. 12-14.

Pythia crassidens, *Pfr. Mon. Auric.* p. 99.

Hab. Isle of Amboina.

§ 4. *Doubtful species.*

36? PYTHIA DILATATA.

Polydonta dilatata, *Beck, Ind.* p. 102. n. 9.

"*Scar. imbrium*, *Guér. Iconogr.* pl. 7. f. 6?; *Griff. Anim. Kingd.* pl. 27. f. 1.—Philippine Islands."

Pythia dilatata, *Pfr. Mon. Auric.* p. 99.

37? PYTHIA GIBBOSA.

Polydonta gibbosa, *Beck, Ind.* p. 101. n. 3.

Pythia gibbosa, *Pfr. Mon. Auric.* p. 99.

6. PLECOTREMA, H. and A. Adams.

Shell ovate-conic, or rather fusiform, solid, usually grooved spirally; spire conic, acute; aperture oblong, contracted; parietal plaits two, the lower of which is bifid or divided into two branches; columellar plait single; peristome more or less thickened, sometimes terminating in a varix, bearing within two, or rarely three teeth.

Plecotrema, *H. and A. Adams*, 1853, *Proc. Zool. Soc.* p. 120; *Gen. rec. Moll.* ii. p. 240.

Pfr. in Malak. Bl. 1854, p. 149; *Mon. Auric.* p. 99.

Lirator, *Beck, Ind.* p. 103?

This genus has been founded by its authors upon several new types, and is easily to be distinguished by good and constant characters. Nevertheless the *Auricula labella*, *Desh.*, which is referred to it by H. and A. Adams, a very imperfectly known species, seems to belong rather to the genus *Cassidula*, if it be not identical with *C. Kraussi*.

The known species may be arranged thus:—

A. With the umbilicus open	§ 1. No. 1-6
B. Rather imperforate	§ 2. - 7-13
C. Aberrant species	§ 3. - 14

§ 1. *Umbilicus more or less open and pervious.*1. *PLECOTREMA TYPICA.*

Shell umbilicate, ovate-conic, solid, crowdedly grooved spirally, not shining, of a pale rusty colour, with brown bands; spire produced, with rather convex outlines, and the apex pointed; whorls nine, indistinct, the last about as long as the spire, somewhat turgid above, compressed round the open and deep umbilicus, with a strong, varix-shaped crest behind the aperture, which is scarcely oblique, narrow; parietal plaits two, the upper nodiform, the other deeply bifid; columellar plait transverse; peristome simple, with the margins united by a callus; right margin thickened and bidentate within; columellar margin spreading. Length 8, breadth 4 mill.

Plecotrema typica, *H. and A. Adams in Proc. Z. S.* 1853, p. 120; *Gen. rec. Moll.* ii. p. 240. pl. 82. f. 4.

Pfr. Syn. Auric. n. 96; *Mon. Auric.* p. 100; *Novit. Conch.* i. p. 16. n. 26. t. 5. f. 12-14.

Hab. Pulo Penang (*Taylor*); Tachoban, Isle of Zeyte (*H. Cuming*).

2. *PLECOTREMA CONCINNA.*

Shell umbilicate, ovate-conic, solid, distinctly striated longitudinally, and crowdedly grooved spirally, dirty fulvous; spire conic, acute; suture indistinct; whorls nine, flat, the last about as long as the spire, slightly angled above, compressed round the umbilicus, which is funnel-shaped and not pervious, with a strong crest behind the peristome; aperture scarcely oblique, narrow; parietal plaits two, the upper nodiform, the other obsoletely bifid; columellar plait small, horizontal; peristome nearly simple, with the margins united by a rather thick deposit; right margin bidentate within; columellar margin dilated, spreading. Length $6\frac{1}{2}$, breadth 4 mill.

Plecotrema concinna, *H. and A. Adams in Proc. Z. S.* 1853, p. 122; *Gen. rec. Moll.* ii. p. 241.

Pfr. Syn. Auric. n. 97; *Mon. Auric.* p. 101.

Hab. Moreton Bay, Australia.

3. *PLECOTREMA LIRATA.*

Shell umbilicate, ovate-conic, thick, sculptured with very close-set spiral furrows, not shining, of a dirty brownish colour; spire conic, with the outlines somewhat curvilinear, and the apex pointed; whorls nine, indistinct, flat, the last about as long as the spire, compressed at base, crested behind the aper-

ture, contracted anteriorly; umbilicus middle-sized, not pervious, furnished within with an elevated spiral rib; aperture scarcely oblique, narrow; parietal plaits two, the upper nodiform, the other compressed, unequally bifid; columellar plait transverse; peristome simple, with the margins united by a shining deposit, which is sinuate above; right margin bidentate; columellar margin spreading. Length $6\frac{2}{3}$, breadth 4 mill.

Plecotrema lirata, *H. and A. Adams in Proc. Z. S.* 1853, p. 121;
Gen. rec. Moll. ii. p. 241.

Pfr. Syn. Auric. n. 98; *Mon. Auric.* p. 101.

Hab. Moreton Bay, Australia.

4. *PLECOTREMA BELLA*.

Shell umbilicate, ovate-conic, solid, sculptured with equal granulate spiral ridges, not shining, of a dirty fulvous colour; spire produced, gradate, with the apex rather pointed; whorls seven, girdled with a stronger ridge below the deep suture; last whorl shorter than the spire, acutely crested behind the aperture, keeled at base round the punctiform umbilicus; aperture scarcely oblique; parietal plaits two, the upper nodiform, the other indistinctly bifid anteriorly, produced externally into the keel; columellar plait transverse; peristome continuous, free and slightly expanded all round; right margin bearing within two minute teeth. Length 5, breadth $2\frac{2}{3}$ mill.

Plecotrema bella, *H. and A. Adams in Proc. Z. S.* 1854, p. 37;
Gen. rec. Moll. ii. p. 241.

Pfr. Syn. Auric. n. 99; *Mon. Auric.* p. 102.

Hab. Philippine Islands.

5. *PLECOTREMA DECUSSATA*.

Shell subumbilicate, ovate-conic, solid, granularly decussated by spiral furrows and longitudinal striæ, slightly shining, brown; spire conic, with the apex pointed; whorls seven, rather flat, scarcely distinct, the last a little longer than the spire, somewhat turgid near the suture, attenuated at base, and furnished with an elevated crest, which surrounds the umbilical region, pale anteriorly; aperture scarcely oblique, oblong; parietal plaits two, white, the upper perpendicular, the other entering, bifid externally; columellar plait ascending rather obliquely; peristome straight; right margin furnished within with a white callus and two small teeth; basal margin somewhat truncate; columellar margin slightly spreading. Length 7, breadth 4 mill.

Plecotrema decussata, *H. and A. Adams in Proc. Z. S.* 1853, p. 121; *Gen. rec. Moll.* ii. p. 241.

Pfr. Syn. Auric. n. 100; *Mon. Auric.* p. 102.

Hab. Philippine Islands.

6. PLECOTREMA BICOLOR.

Shell subumbilicate, ovate-conic, solid, marked with close-set spiral furrows, irregularly tuberculated with longitudinal wrinkles, rather shining, brown with pale bands; spire conic, with the outlines rather convex, and the apex pale and pointed; whorls nine, scarcely convex, the last a little longer than the spire, somewhat turgid above, attenuated at base, compressed round the perforation (which is not pervious), furnished anteriorly with an elevated crest and contracted; aperture scarcely oblique, oblong; parietal plaits two, parallel to each other, the lower one slightly divided externally; columellar plait small, transverse; peristome slightly spreading, with the margins joined by a deposit; right margin bearing two minute teeth. Length 6, breadth $3\frac{1}{2}$ mill.

Plecotrema bicolor, *Pfr. in Proc. Z. S.* 1855, p. ; *Mon. Auric.* p. 103.

Hab. Port Jackson (*Strange*).

§ 2. *Shell rather imperforate.*

7. PLECOTREMA CLAUSA.

Shell scarcely subperforate, ovate-conic, ventricose, solid, regularly girdled with rather crowded elevated spiral ridges, shining, reddish-brown, or pale fulvous; spire conic, with the apex pointed; whorls eight, rather flat, the last longer than the spire, thickened anteriorly into a strong blunt crest, attenuated at base; aperture scarcely oblique, extremely narrow; parietal plaits two, the upper compressed, oblique, the other bifid exteriorly; columellar plait compressed, transverse; peristome thin, with the margins united by a broad callous labium; right margin cut out at its upper part, then shortly produced, furnished within with two strong teeth; columellar margin narrowly spreading. Length 7, breadth 4 mill.

Plecotrema clausa, *H. and A. Adams in Proc. Z. S.* 1853, p. 121; *Gen. rec. Moll.* ii. p. 241.

Pfr. Syn. Auric. n. 101; *Mon. Auric.* p. 103; *Novit. Conch.* i. p. 15. n. 25. t. 5. f. 9-11.

Hab. Sandwich Islands.

8. PLECOTREMA EXARATA.

Shell scarcely subperforate, ovate-conic, slightly striated, and regularly sculptured with spiral furrows, rather shining, blackish-brown; spire conic, pointed; suture linear; whorls eight, scarcely convex, the last longer than the spire, slightly attenuated at base, indistinctly crested behind the aperture, contracted anteriorly; aperture nearly perpendicular, narrow; parietal plaits two, the upper small, oblique, the other indistinctly bifid externally; columellar plait middle-sized, somewhat ascending; peristome simple, acute, with the margins united by a shining deposit; right margin rather straight, bearing within two teeth on the middle; columellar margin sinuate, affixed. Length 6, breadth 4 mill.

Plecotrema exarata, *H. and A. Adams in Proc. Z. S.* 1853, p. 122 : *Gen. rec. Moll.* ii. p. 241.

Pfr. Syn. Auric. n. 102; *Mon. Auric.* p. 104.

Hab. Borneo.

9. PLECOTREMA STRIATA.

B.M.

Shell imperforate, ovate-conic, solid, sculptured with unequally distant spiral furrows, several of which are interrupted, slightly shining, blackish; spire conic, with the outlines curvilinear, and the apex mucronate; suture bordered; whorls seven, rather flat, the last much longer than the spire, convex, attenuated at base; aperture rather oblique, oblong; parietal plaits two, the upper lamelliform, oblique, the other shortly bifid externally; columellar plait strong, transverse; peristome straight, sharp, with the margins united by a broad deposit; right margin bidentate within; columellar margin scarcely dilated. Length 7, breadth $4\frac{1}{2}$ mill.

Laimodonta striata, *Nutt.* ?

Auricula striata, *Philippi in Zeitschr. f. Malak.* 1846, p. 98.

Pedipes inæqualis, *C. B. Adams, MSS.*, teste *H. and A. Adams.*

Plecotrema inæqualis, *H. and A. Adams in Proc. Zool. Soc.* 1853, p. 122; *Gen. rec. Moll.* ii. p. 241.

Pfr. Syn. Auric. n. 103.

Plecotrema striata, *Pfr. Mon. Auric.* p. 104.

Ellobium striatum, "*Philippi*," *H. and A. Adams, Gen.* ii. p. 238?

β . Right margin bearing the teeth on a perpendicular callous crest.

Plecotrema labrella, *H. and A. Adams, Proc. Zool. Soc.* 1852, p. 122.

Plecotrema striata β , *Pfr. Mon. Auric.* p. 105.

Lirator multisulcatus, *Beck, Ind.* p. 108?

Hab. Sandwich Islands; the variety, Isle of Opara.

10. PLECOTREMA PUNCTIGERA.

Shell subrimate, ovate, solid, sculptured with impressed points, which are arranged in spiral series, slightly shining, fulvous-yellow, marked with reddish-brown bands; spire conoidal, with the outlines curvilinear, and the apex rather blunt; whorls six to seven, rather flat, indistinct, the last longer than the spire, shortly deflected anteriorly, very indistinctly compressed at base; aperture nearly perpendicular, oblong; parietal plaits two, the upper nodiform, the other bifid; columellar plait compressed, oblique; peristome straight, acute; right margin callous within, bearing two distant teeth; columellar margin slightly dilated, affixed. Length $6\frac{1}{3}$, breadth 4 mill.

Plecotrema punctigera, *H. and A. Adams in Proc. Z. S.* 1853, p. 120; *Gen. rec. Moll.* ii. p. 241.

Pfr. Syn. Auric. n. 104; *Mon. Auric.* p. 105.

Hab. Borneo (*Taylor*).

11. PLECOTREMA MONILIFERA.

Shell subrimate, ovate-conic, solid, surrounded with spiral ridges, which are nearly equidistant and slightly granular, somewhat shining, dirty fulvous; spire conic, rather pointed; whorls seven, flat, the last shortly deflexed anteriorly, a little longer than the spire, attenuated at base, contracted anteriorly; aperture scarcely oblique, extremely narrow; parietal plaits two, compressed, almost parallel to each other, the lower one bifid; columellar plait middle-sized, somewhat ascending; peristome simple, with the margins united by a thin deposit; right margin bearing within two approximate teeth; columellar margin callous, affixed. Length 5, breadth 3 mill.

Plecotrema monilifera, *H. and A. Adams in Proc. Z. S.* 1853, p. 120; *Gen. rec. Moll.* ii. p. 241.

Pfr. Syn. Auric. n. 105; *Mon. Auric.* p. 105.

Hab. —?

12. PLECOTREMA PUNCTATO-STRATA.

Shell subperforate, ovate-conic, solid, sculptured with punctured spiral striæ, slightly shining, brownish; spire conic, rather pointed; whorls six, flat, with two spiral furrows near the suture, last whorl forming about three-fifths of the total length,

slightly inflated above, attenuated and more distinctly grooved at base, contracted anteriorly; aperture rather oblique, extremely narrow; parietal plaits two, the upper rather oblique, the other bifid externally; columellar plait transverse; peristome straight; right margin furnished with an external pale border, simple at its upper part, callous and thickened below, bearing three teeth. Length 5, breadth 3 mill.

Plecotrema punctatostriata, *H. and A. Adams in Proc. Z. S.* 1853, p. 121.

Pfr. Syn. Auric. n. 106; *Mon. Auric.* p. 106.

Plecotrema punctostriata, *H. and A. Adams, Gen. rec. Moll.* ii. p. 241.

Hab. Borneo and Singapore (*Taylor*).

13. PLECOTREMA IMPERFORATA.

Shell imperforate, ovate-conic, solid, with punctured spiral striæ, opaque, of a dirty fulvous colour; spire conoidal, with the apex rather blunt; whorls five to six, flat, with two deep grooves near the suture, the last forming two-thirds of the total length, attenuated and spirally furrowed at base, slightly contracted anteriorly; aperture oblique, extremely narrow; parietal plaits two, the upper lamelliform, oblique, the other deeply bifid; columellar plait compressed, transverse; peristome straight; right margin sharp, bearing within three to four small teeth on a white callus; columellar margin indistinct. Length 5, breadth $3\frac{1}{2}$ mill.

Plecotrema imperforata, *H. and A. Adams in Proc. Z. S.* 1853, p. 120; *Gen. rec. Moll.* ii. p. 241.

Pfr. Syn. Auric. n. 107; *Mon. Auric.* p. 106.

Hab. Isle of Negros, Philippines.

§ 3. *Aberrant species.*

14. PLECOTREMA CUBENSIS.

Shell minute, subperforate, ventricosely fusiform, thin, spirally striated under a lens, slightly hairy, transparent, yellowish horn-coloured; spire conic, rather blunt; whorls five, scarcely convex, the last a little longer than the spire, slightly angled above, attenuated at base; aperture nearly perpendicular, oblong; parietal plaits two, compressed, the upper one minute, the other very indistinctly bifid; columellar plait strong, transverse; peristome sharp, with the margins united by a callus; right margin sinuated above, callous within, and bearing two teeth; colu-

mellar margin dilated, slightly spreading. Length $2\frac{1}{2}$, breadth $1\frac{1}{2}$ mill.

Plecotrema Cubensis, *Pfr. in Malak. Bl.* 1854, p. 153; *Syn. Auric.* n. 108; *Mon. Auric.* p. 107.

H. and A. Adams, Gen. rec. Moll. ii. p. 241.

Hab. Isle of Cuba (*Gundlach*).

7. CASSIDULA, Férussac.

Shell rimate, cassidiform, solid; spire short, conoidal; last whorl large, attenuated at base, provided usually with a keel surrounding the umbilical region; aperture narrow, sinuate; body of the penultimate whorl bearing various teeth; columellar plait strong; right margin of the peristome thickened, with a longitudinal internal callus, which is sinuated above.

Cassidula, *Férussac*, 1821, *Prodr.* p. 105.

Latreille, Fam. Nat. p. 181.

Rang, Man. p. 173.

Gray in Proc. Zool. Soc. 1847, p. 175.

H. and A. Adams in Proc. Zool. Soc. 1854, p. 31; *Gen. rec. Moll.* ii. p. 238.

Pfr. in Malak. Bl. 1854, p. 150; *Mon. Auric.* p. 108.

Cassidulus, *Berthold*, 1827, in *Latr. Fam.* p. 176.

Beck, Ind. p. 105.

Rhodostoma, *Sicains.*, 1840, *Malak.* p. 344.

Herrmannsen, Ind. Gen. Mal. ii. p. 392.

Sidula, *Gray*, 1840, in *Turt. Man.* p. 21; *Syn. Brit. Mus.* 1842, pp. 70, 91.

Voluta, sp., *Linn.*, *Chemn.*, *Gmel.*

Ellobium, sp., *Bolt.*

Limax, sp., *Martyn.*

Bulimus, sp., *Brug.*

Helix, sp., *Gmel.*

Auricula, sp., *Lamarck et Auctt.*

This genus, which is better characterized by its peculiar habit than by an exact description, has been proposed by Férussac as a section or subgenus of *Auricula*, and adopted by the above-quoted writers. The typical species are provided with a more or less distinct basal keel, and by this character we may divide the genus into two sections:—

- | | |
|---|---------------|
| A. Aberrant, with the basal keel indistinct . . . | § 1. No. 1- 2 |
| B. Typical Cassidulæ | § 2. - 3-16 |
| C. Little-known species | § 3. - 17-19 |

§ 1. *Aberrant species, with the basal keel indistinct.*

1. CASSIDULA GRUNERI.

Shell subperforate, ovate-oblong, rather solid, blackish-brown, often eroded, minutely striated longitudinally, decussated by close-set spiral grooves, which are deeper and more distant near the suture; spire convexly conoidal, blunt; suture linear; whorls nearly five, moderately convex, the last forming two-thirds of the total length, ovate, slightly attenuated and indistinctly tuberculated at base; aperture scarcely oblique, semi-ovate; parietal plait single, compressed, rather transverse; columellar plait a little smaller, parallel to the parietal one; peristome simple; right margin slightly contracted anteriorly, scarcely reflexed, bearing within a single tooth a little above the middle; columellar margin dilated, thin, slightly spreading. Length 7, breadth $4\frac{1}{2}$ mill.

Cassidula Gruneri, *Pfr. in Malak. Bl.* 1854, p. 111; *Syn. Auric.* n. 109; *Mon. Auric.* p. 109.

H. and A. Adams, Gen. rec. Moll. ii. p. 238.

Hab. Borneo (*Gruner*).

2. CASSIDULA DOLIOLUM.

Shell subimate, oblong-ovate, rather solid, sculptured with regular spiral grooves, and punctiformly decussated with irregular longitudinal striæ, not shining, brownish or whitish-grey, with pale bands; spire convexly conoidal, slightly mucronate; suture impressed; whorls seven, scarcely convex, the last forming two-thirds of the total length, indistinctly angled above, gradually attenuated towards the rounded base; aperture nearly perpendicular, narrowly semiovate; parietal plait single, compressed, entering horizontally, and sometimes an indistinct small tubercle above it; columellar plait similar, a little smaller; peristome simple; right margin very little reflexed, bearing within three teeth, the middle of which is stronger and the lowest indistinct. Length 10, breadth 6 mill.

Auricula doliolum, *Petit in Proc. Zool. Soc.* 1842, p. 201.

Cassidula doliolum, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 31; *Gen. rec. Moll.* ii. p. 238.

Pfr. Syn. Auric. n. 110; *Mon. Auric.* p. 109.

β . Larger, more slender and lengthened. Length 13, breadth 7 mill.

Hab. Sinit, Isle of Luzon (*H. Cuming*); the var. β . Sydney, Australia.

§ 2. *Typical Cassidulæ: basal keel distinct.*

3. CASSIDULA ZONATA.

B.M.

Shell imperforate, ovate-conoidal, chestnut-coloured, with three pale bands, slightly striated and sculptured with distant punctured spiral striæ, one of which near the suture is deeper than the others; spire conoidal, rather pointed; whorls seven, almost flat, the last forming three-fifths of the total length, somewhat inflated above, attenuated at base; aperture scarcely oblique, sinuately oblong; parietal plaits two, the upper minute, punctiform, the other compressed, nearly horizontal, continued externally into the keel, which surrounds the umbilical region, columellar plait compressed, rather converging towards the other, produced externally to the margin; peristome dilated; right margin thickened externally into a crest, bearing within, in the middle, a single tooth; columellar margin, reflexed, affixed. Length $8\frac{1}{2}$, breadth 5 mill.

Cassidula zonata, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 32;
Gen. rec. Moll. ii. p. 239.

Pfr. Syn. Auric. n. 111; *Mon. Auric.* p. 110.

Hab. Sydney, Australia.

4. CASSIDULA FABA.

Shell imperforate, ovate, solid, sculptured, under a lens, with crowded spiral ridges and still more crowded longitudinal striæ, covered with a dirty fulvous, opaque periostraca; spire semi-globose; whorls 6-7, moderately convex, the first one forming a minute, rather eroded, mucronate apex, the others contracted near the linear suture, the last equalling two-thirds of the total length, scarcely attenuated at base, provided with a slight keel, which surrounds the middle-sized umbilical region; aperture rather oblique, sinuately semioval, whitish within; parietal plaits two, the upper small, nodiform, the other compressed, transverse, placed below the middle; columellar plait tooth-shaped, obliquely produced to the margin; peristome white externally; right margin sinuate above, bearing near the middle a single tooth, which is elongated into a crest towards the base; columellar margin affixed. Length 11, greatest breadth 7 mill.

Auricula (Cassidula) faba, *Menke in Zeitschr. f. Malak.* 1853, p. 124.

Cassidula faba, *Pfr. Syn. Auric.* n. 112; *Novit. Conch.* i. p. 5.
n. 7. t. 2. f. 7-9; *Mon. Auric.* p. 111.

H. and A. Adams, Gen. rec. Moll. ii. p. 238.

Hab. Java (*Heusinger*).

5. *CASSIDULA SOWERBYANA*.

Shell subrimate, oblong, solid, slightly striated, and sculptured with crowded spiral grooves, rather shining, dark chestnut-coloured; spire convexly conoidal, blunt, for the most part eroded; suture impressed, bordered with white; whorls five, the upper ones moderately convex, the last forming about three-fifths of the total length, thick, callous and constricted anteriorly, shortly keeled at base; aperture scarcely oblique, sinuately semiovate; body of the penultimate whorl bearing above a small tubercle, and below the middle a rather obliquely entering plait; columellar plait strong, nearly triangular; peristome lipped, with the margins united by a yellowish deposit; right margin furnished within, above the middle, with a decurrent tooth; columellar margin slightly reflexed. Length $13\frac{1}{2}$, breadth $7\frac{2}{3}$ mill.

Auricula (*Cassidula*) *Sowerbyana*, *Pfr. in Zeitschr. f. Malak.* 1853, p. 125.

Cassidula decussata, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 32. n. 13 ?

Cassidula Sowerbyana, *Pfr. Syn. Auric.* n. 113; *Mon. Auric.* p. 111.

H. and A. Adams in Proc. Zool. Soc. 1854, p. 32. n. 10;

Gen. rec. Moll. ii. p. 238.

Hab. Singapore; and Moreton Bay, Australia.

6. *CASSIDULA BENSONI*.

Shell imperforate, ovate, turgid, solid, sculptured with slightly wrinkled longitudinal striæ, distant scarcely elevated ridges and more crowded spiral striæ, dark brown; spire short, conoidal, with convex outlines; suture slightly canaliculate; whorls eight, rather flat, marginated, below the suture, by a deeper furrow; last whorl forming two-thirds of the total length, slightly angulated above, attenuated in front and furnished with a compressed keel, which is elongated inwards, and surrounds a middle-sized umbilical spot; aperture rather oblique, narrow; parietal plaits two; the upper one tooth-shaped, the other compressed, touching the keel externally; columellar plait simple, oblique, strong, compressed, produced outwards to the margin; peristome narrowly expanded, furnished within, above the middle, with a compressedly tooth-shaped callus, which is sinuately prolonged to the base. Length 11, greatest breadth 8 mill.

Cassidula Bensoni, *Pfr. in Malak. Bl.* 1855, p. 7; *Novit. Conch.*

i. p. 47. n. 82. t. 12. f. 17, 18; *Mon. Auric.* p. 111.

H. and A. Adams, Gen. rec. Moll. ii. p. 238.

Hab. Singapore (*Dr. Bacon*).

7. CASSIDULA LABRELLA.

Shell ovate-oblong, slightly striated, greyish-fulvous; spire conic, shorter than the last whorl; whorls seven to eight, convex, the last attenuated at base, terminating in an oblique keel surrounding the umbilicus, which is funnel-shaped, but not very deep; aperture elongate, narrow; columella thickened, bearing two rounded plaits of middle size; right margin of the peristome thick, flattened anteriorly, suddenly lessened in breadth towards its upper part. Length 12, breadth 7 mill.

Auricula labrella, *Desh. in Enc. Méth.* ii. p. 92. n. 15; *Guér. Mag.* 1830, pl. 14.

Lamarck, Hist. ed. 2. viii. p. 337. n. 23.

Küst. Mon. Auric. p. 22. t. 2. f. 4, 5.

Auricula (*Conovula*) *fabula*, *Férussac, Prodr.* p. 105. n. 24 ?

Cassidulus ? *labrella*, *Beck, Ind.* p. 106. n. 6.

Anton in Z. f. M. 1847, p. 170.

Conovulus labrella, *Küst. Auric.* p. v.

Rhodostoma fabula, *Swains. Malac.* p. 344 ?

Cassidula labrella, *Pfr. Syn. Auric.* n. 114; *Mon. Auric.* p. 112.

Hab. Isle de France.

This species seems to be nearly allied to, if not identical with, the following.

8. CASSIDULA KRAUSSI.

B.M.

Shell subrimate, acuminate ovate, solid, rather smooth, slightly shining, dark brown; spire conic, rather pointed; suture linear; whorls seven, the upper ones flat, striated spirally, the last forming four-sevenths of the total length, furnished with an elevated crest behind the aperture, contracted anteriorly; basal keel compressed, arched, white, surrounding a middle-sized periomphalum; aperture rather oblique, narrow, sinuate, not dilated in front; parietal plaits two, the upper nodiform, very small, indistinct, the other strong, transverse; columellar plait a little smaller, parallel to the other; peristome rather simple, with the margins not united; right margin bearing within, at its upper extremity, two small teeth, and then a dentiform callus, which is continued into a crest at the base; columellar margin scarcely spreading. Length 13, greatest breadth $7\frac{1}{2}$ mill.

Auricula Kraussi, *Küst. Auric.* p. 24. t. 3. f. 6-8.

Krauss, Südaf. Moll. p. 82.

Cassidula Kraussi, *Küst. Auric.* p. v.

H. and A. Adams in Proc. Zool. Soc. 1854, p. 31; *Gen. rec.*

Moll. ii. p. 238.

Cassidula Kraussi, *Pfr. Syn. Auric.* n. 115; *Mon. Auric.* p. 113.
Hab. Natal, South Africa.

9. *CASSIDULA LUTESCENS.*

Shell imperforate, somewhat fusiform, solid, slightly furrowed longitudinally, yellowish, covered with a coarse periostraca; spire conic, with the outlines rather convex and the apex pointed; suture impressed; whorls nine, the upper ones flat, the following marked with two furrows beneath the suture, the last forming about three-fifths of the total length, attenuated in front; parietal plaits two, the upper one slight, compressed, oblique, the other larger, below the middle, nearly transversal, continued externally into a compressed and elevated crest, which surrounds a middle-sized, excavated umbilical space; columellar plait acute, produced externally to the margin; aperture rather oblique, oblong, acuminate; peristome thickened, spreading; right margin furnished within with a white callus, which is emarginate above and bidentate at the lower part; columellar margin rather dilated. Length 11, breadth $5\frac{1}{2}$ mill.

Cassidula lutescens, *Pfr. Mon. Auric.* p. 113.

Hab. — ?

10. *CASSIDULA SULCULOSA.*

Shell subrimate, ovate, thick, striated and sculptured with crowded spiral grooves, scarcely shining, blackish-brown, greyish-fulvous or whitish, sometimes banded; spire conoidal, rather pointed, sometimes eroded; whorls eight, flat, indistinct, the last forming about two-thirds of the total length, slightly angled above, gradually attenuated towards the base; basal keel elevated, surrounding a middle-sized umbilical region; aperture scarcely oblique, oblong, narrowed above the middle; parietal plaits two, the upper small, nodiform, the other placed on the middle, compressed, ascending obliquely; peristome much thickened externally; right margin arcuately cut out at its upper and inner part, then bearing a longitudinal tooth reaching to the base; columellar margin dilated, spreading, bearing a longitudinal plait. Length 16, greatest breadth $9\frac{3}{4}$ mill.

Auricula (Cassidulus) sulculosa, *Mouss. Jar. Moll.* p. 45. t. 5. f. 8.
Cassidula sulculosa, *H. and A. Adams in Proc. Zool. Soc.* 1854,
 p. 31; *Gen. rec. Moll.* ii. p. 239.

Pfr. Syn. Auric. n. 116; *Mon.* p. 114.

Hab. Java (*Zollinger*); Bureas, Philippine Islands (*H. Cuming*).

11. *CASSIDULA TURGIDA*.

Shell shortly rimate, ovate, somewhat fusiform, ventricose, solid, slightly shining, brownish, striate and sculptured with rather crowded spiral furrows and punctured lines, which are deeper near the suture; spire convexly conoidal, slightly mucronate; suture impressed; whorls seven to eight, convex, the last forming three-fifths of the total length, inflated above; basal keel strong, surrounding a broad umbilical region; aperture rather oblique, oblong, narrow at base; parietal teeth two, the upper oblique, the other larger, tongue-shaped, nearly horizontal; columellar plait strong, thick, ascending obliquely, produced exteriorly to the margin, slightly sulcate; peristome expanded, bordered with a pale streak; right margin bearing above the middle a broad white, acutely dentiform callus, which spreads rectangularly, and is continued to the columellar plait; columellar margin callous, appressed. Length 14, greatest breadth 9 mill.

Cassidula turgida, *Pfr. in Malak. Bl.* 1854, p. 154; *Syn. Auric.* n. 117; *Novit. Conch.* i. p. 48. n. 83. t. 12. f. 19, 20; *Mon. Auric.* p. 115.

H. and A. Adams, Gen. rec. Moll. ii. p. 239.

Hab. Isle of Negros, Philippines.

12. *CASSIDULA NUCLEUS*.

Shell subrimate, ovate-conoidal, cassidiform, solid, very minutely striated longitudinally and spirally, slightly shining, dark chestnut-coloured; spire conoidal, with rather convex outlines and the apex rather pointed; suture slight; whorls eight, scarcely convex, the last forming two-thirds of the total length, inflated above, sometimes with a white band, attenuated at base; basal keel elevated, surrounding a broad periomphalum; aperture nearly perpendicular, narrow, contracted above the middle, rounded in front; parietal plaits two, compressed, the upper small, almost vertical, the other entering obliquely; columellar plait strong, rather duplicate exteriorly; peristome thickened; right margin inflated externally, bearing within, above its middle, a strong, sharp tooth, which is longitudinally continued to the base; columellar margin dilated, sinuate, spreading. Length 21, greatest breadth 13 mill.

Limax nucleus, *Martyn, Univ. Conch.* ii. pl. 67. fig. ext.; ed. *Chen.* pl. 24. f. 2.

Helix nucleus, *Gmel. Syst.* p. 3651. n. 255.

Auricula nucleus, *Férussac, Prodr.* p. 105. n. 26.

Desh. in Enc. Méth. ii. p. 92. n. 13, et in *Lam. Hist.* viii. p. 335. n. 21.

Auricula nucleus, *Küst. Auric.* p. 29. t. 4. f. 5, 6 ?

Auricula cassis, *Küst. in Ind.* fasc. 42 ?

Cassidulus nucleus, *Beck, Ind.* p. 105. n. 4.

Rhodostoma nucleus, *Swains. Malac.* p. 334.

Cassidula nucleus, *Mörch, Cat. Föld.* p. 38. n. 776.

H. and A. Adams in Proc. Zool. Soc. 1854, p. 31; *Gen. rec.*
Moll. ii. p. 238.

Pfr. Syn. Auric. n. 118; *Mon. Auric.* p. 115.

β. Slightly banded.

Auricula vespertilionis, *Less. Voy. Coquille*, p. 340. n. 84 (*Beck*).

Hab. Otaheite; Manilla; the variety in New Ireland.

13. CASSIDULA MUSTELINA.

Shell subrimate, ovate-conoidal, slightly striated spirally, dark brown, marked usually with four unequal white or bluish bands; spire short, conoidal, rather pointed; suture linear; whorls seven, the upper ones almost flat, the last forming about four-fifths of the total length, ventricose, furnished at base with an arched white keel and with a second one next the umbilical groove; aperture nearly perpendicular, elongate, rounded in front; body of the penultimate whorl bearing an indistinct tubercle above, and, near the columella, a compressed plait, scarcely descending; columellar plait simple, slightly ascending; peristome white or rose-coloured, inflated externally, with the margins united by a very thin deposit; right margin furnished within with a longitudinal crest, which above the middle is interrupted by a semicircular notch; columellar margin much dilated, spreading. Length 24, greatest breadth 17 mill.

— *Lister, Hist.* t. 834. f. 59.

Knorr, Vergn. vi. pl. 17. f. 9.

Auricula mustelina, *Desh. in Enc. Méth.* ii. p. 92. n. 14, and in
Lam. Hist. viii. p. 336. n. 22.

Küst. Auric. p. 28. t. 4. f. 3, 4.

Auricula rhodostoma, *Hombr. and Jacq. Voy. Pôle Sud, Zool.* v.
p. 33. pl. 9. f. 1-3.

Cassidulus mustelæ, *Beck, Ind.* p. 105. n. 3.

Cassidula mustelina, *Anton, Verz.* p. 48. n. 1771.

H. and A. Adams in Proc. Zool. Soc. 1854, p. 31; *Gen. rec.*
Moll. ii. p. 238.

Pfr. Syn. Auric. n. 119; *Mon. Auric.* p. 116.

Cassidula mustelæ, *Mörch, Cat. Föld.* p. 38. n. 777.

Hab. New Zealand, Singapore, and Pulo Penang.

14. CASSIDULA AURIS FELIS.

B.M.

Shell imperforate, ovate, rather thick, minutely striated spirally, dark brown; spire conoidal, rather pointed; suture slight, regular; whorls seven, moderately convex, the last forming three-fourths of the total length, ventricose, marked usually with a single pale band at its upper circumference, furnished at the base with a white arched keel surrounding the narrow umbilical region; aperture nearly perpendicular, sinuate, rounded in front, contracted in the middle; parietal plaits two, the upper vertical, near the insertion of the right margin, the other compressed, strong, scarcely descending inwards; columellar plait twisted, bifid externally; peristome white or flesh-coloured, expanded, thickened externally and marked with a white streak; right margin widely sinuate and emarginate above, then dilated, flat, crenulate; columellar margin thick, spreading narrowly. Length 28, greatest breadth 17 mill.

Voluta coffea, *Chemn. Conch.* ix. 2. p. 45. t. 121. f. 1043, 1044.

Wood, Ind. t. 19. f. 15, not *Linn.*

Bulinus auris felis, *Brug. in Enc. Méth.* i. p. 343. n. 77.

(*Favanne, Conch.* t. 65. f. H. 7.)

Ellobium inflammatum, *Bolt. Mus.* p. 106. n. 1352, ed. ult. p. 74. n. 1352.

Auricula auris felis, *Blainv. in Diet. Sc. Nat.* iii. *Suppl.* p. 132.

Woodward, Mon. Moll. p. 173. f. 99.

Auricula felis, *Férussac, Prodr.* p. 105. n. 25; *Enc. Méth.* pl. 460. f. 5.

Lam. Hist. vi. 2. p. 138. n. 5; ed. *Desh.* viii. p. 326.

Menke, Syn. ed. ult. p. 35.

Pot. and Mich. Gal. Douai, i. p. 201.

Küst. in Chemn. ed. nov. i. 13. t. 4. f. 9, 10; *Auric.* p. 16. t. 3. f. 3.

Reeve, Conch. Syst. ii. pl. 187. f. 6.

Jay, Catal. 1850, p. 264.

Auricula nucleus, *Küst. Auric.* p. 70. t. 7. f. 3, 4.

Auricula fusca, *Hombr. and Jacq. Voy. Pôle Sud, Zool.* v. p. 34. pl. 9. f. 7-9.

Cassidulus felis, *Beck, Ind.* p. 105. n. 2 (*Enc. Méth.*).

Cassidulus Chemnitzii, *Beck. Ind.* p. 105. n. 1.

Cassidula felis, *Anton, Verz.* p. 48. n. 1770.

Gray in Proc. Zool. Soc. 1847, p. 179.

Cassidula inflammata, *Mörch, Cat. Yold.* p. 38. n. 774.

Cassidula coffea, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 31; *Gen. rec. Moll.* ii. p. 238. pl. 82. f. 2, 2a.

Cassidula auris felis, *M. E. Gray, Fig. Moll. Anim.* pl. 304. f. 3.

Pfr. Syn. Auric. n. 120, 121; *Mon. Auric.* p. 117.

Sidula felis Catti, *Gray in Turt. Man.* ed. nov. p. 21.

Rhodostoma coffea, *Swains. Malac.* p. 344.

Hab. Indian Archipelago; Manilla (*Cuming*).

15. CASSIDULA ANGULIFERA.

Shell rimate, cassidiform, rather solid, very indistinctly striated spirally, rather shining, reddish-brown, with two white bands, one of which is narrow, and runs along the suture, the other broader, placed on the angle; spire short, rather concavely conoidal, slightly pointed; suture impressed; whorls eight, rather flat, the last forming three-fourths of the total length, angled at its upper circumference, attenuated at the base; basal keel slight, surrounding the umbilical region, which is broad and inflated near the groove; aperture nearly perpendicular, elongate, sinuate, rounded in front; parietal plaits two, the upper almost vertical, the other approximate to the columella, transverse, scarcely descending; columellar plait twisted, bifid; peristome thickened and bordered externally, with the margins not united; right margin bearing within a bisinuate and denticulated ridge; columellar margin thick, spreading. Length 31, greatest breadth 21 mill.

Auricula angulifera, *Petit in Revue Zool.* 1841, p. 101.

Reeve, Conch. Syst. ii. pl. 187. f. 5.

Küst. Auric. p. 45. t. 7. f. 1, 2.

Menke, Moll. Nov. Holl. p. 8. n. 16.

Jay, Catal. 1850, p. 264. n. 6134.

Auricula subrepta, *Hombr. & Jacq. Voy. Pôle Sud, Zool.* v. p. 36. pl. 9. f. 13-15.

Auricula angulata, *Forbes in Voy. Rattlesn. App.* p. 362.

Cassidula angulifera, *Mörch, Cat. Föld.* p. 37. n. 773.

H. and A. Adams in Proc. Zool. Soc. 1854, p. 31; *Gen. rec. Moll.* ii. p. 238.

Pfr. Syn. Auric. n. 122; *Mon. Auric.* p. 119.

Melampus anguliferus, *Chemn. Leç. Elém.* p. 244. f. 913.

Hab. Australia: Raffles Bay, Port Essington.

16. CASSIDULA RUGATA.

B.M.

Shell imperforate, ovate-elliptical, solid, purplish-brown; spire regularly conic, rather blunt; suture regular; whorls seven, the upper ones moderately convex, wrinkled and striated spirally, the last forming three-fourths of the total length, sculptured with strong decurrent undulated wrinkles, which are interrupted irregularly, covered with a pale grey periostraca, indistinctly angled above, attenuated at the base; basal keel slight,

surrounding the umbilical region, which is narrow and rather inflated; aperture slightly oblique, narrow, sinuate, rounded in front; body of the penultimate whorl bearing two oblique plaits, the lower of which is stronger; columellar plait strong, transverse, bifid; peristome orange-coloured, expanded and thickened; right margin bearing within a thick longitudinal ridge, which is cut out at its upper part and denticulated at the remaining; columellar margin spreading, free. Length 32–37, breadth $18\frac{1}{2}$ –20 mill.

Auricula (*Cassidula*) *rugata*, *Menke*, *Moll. Nov. Holl.* p. 7. n. 15.
Küst. Auric. p. 27. t. 4. f. 1, 2.

Jay, *Catal.* 1850, p. 265. n. 6173.

Auricula coelata, *Hombr. and Jacq. Voy. Pôle Sud*, *Zool.* v. p. 33.
pl. 9. f. 4–6.

Auricula rugulata, *Forbes in Voy. Rattlesn. App.* p. 362.

Cassidula rugata, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 31;
Gen. rec. Moll. ii. p. 238.

Pfr. Syn. Auric. n. 123; *Mon. Auric.* p. 120.

Hab. Victoria River, Port Essington, Australia.

§ 3. *Imperfectly known species.*

17. *CASSIDULA RUGULATA.*

Shell imperforate, conic-oblong, striated spirally, and decussated with more distant spiral ridges and minute longitudinal ribs, grey; spire conic, with the apex pointed; whorls nine, scarcely convex, the upper ones banded with brown, the last forming nearly four-fifths of the total length, attenuated and marked with a white keel at base; aperture oblong, gaping; parietal plaits two, oblique, distant; columellar plait twisted, as if composed of two; peristome much thickened; internal callus emarginate superiorly and in the middle, denticulated on its remaining part. Length 33, breadth 19 mill.

Auricula rugulata?, *Jacquinet in Voy. Pôle Sud, Atlas, Moll.* pl. 9.
f. 10–12.

Auricula rugulata, *Rousseau in Voy. Pôle Sud, Zool.* v. p. 35.

Cassidula rugulata, *Pfr. Mon. Auric.* p. 122.

Hab. Arrow Islands.

18. *CASSIDULA MIOXI.*

Shell pyramidal, very minutely striate, uniformly brown or pale yellow, with chestnut-coloured bands; spire moderate, conic, acute; last whorl rather ventricose, contracted at base; aperture narrow; palatal plaits two, distant; columellar plait twisted,

basal; peristome widely expanded, furnished within with a strong ridge, which is emarginate at the upper part. Length 10, breadth 5 mill.

Auricula mioxi, Lesson, Voy. Coquille, p. 341. n. 86.

Melampus myoxi, Beck, Ind. p. 106. n. 5.

Cassidula mioxi, Pfr. Mon. Auric. p. 122.

Hab. New Ireland.

19. CASSIDULA KJAERULFIANA.

Cassidulus Kjaerulfianus, Beck, Ind. p. 106. n. 5.

Hab. Philippine Islands. (Not described.)

8. AURICULA, Lamarck.

Shell oblong-ovate, covered with a thin periostraca; spire short, conoidal, very rarely elongate; last whorl large, rounded at base; aperture longitudinal, narrow; body of the penultimate whorl bearing one or two plaits or tubercles; columellar plait nearly perpendicular, sometimes duplicate; right margin of the peristome thickened, not toothed, internally.

Auricula, Lamarck, 1801, *Syst. Anim.* p. 92 (not in *Hist. d. An. s. Vert.*).

Blainv. in *Dict. Sc. Nat.* iii. *Suppl.* p. 131.

Beck, Ind. p. 102.

Anton, Verz. p. 48 (subgenus).

Gray, 1842, *Syn. Brit. Mus.* p. 91, et 1847, in *Proc. Zool. Soc.* p. 179.

Mörch, Cat. Yold. i. p. 37.

Pfr. in *Zeitschr. f. Malak.* 1853, p. 9 (part.); *Malak. Bl.* 1854, p. 150; *Mon. Auric.* p. 123.

Auriculus, Montfort, 1810, *Conch. Syst.* ii. p. 310.

Marsyas, Oken, 1815, *Lehrb. d. Naturg.* ii. p. 305.

Geovula, Swains. 1840, *Malac.* p. 344.

Ellobium, H. and A. Adams, 1854, in *Proc. Zool. Soc.* p. 7; *Gen. rec. Moll.* ii. p. 237.

Auriculæ (sectio *Auriculæ*), Ferrussac, 1821, *Prodr.* p. 102.

Rang. Man. p. 173.

Bulla, sp., Linn.

Voluta, sp., Linn.

Helix, sp., Müll.

Bulimus, sp., Brug.

Ellobium, sp., Bolt.

Otis, sp., Humph.

Auricula, sp., Lam. 1822, et Auctt.

The species which belong to the above-characterized genus were by Linnæus first placed in the genus *Bulla*, then in *Voluta*; by O. F. Müller in *Helix*; by Bruguière in *Bulinus*. The *Voluta auris Midæ* and *auris Judæ* of Linnæus formed a part of Bolten's genus *Ellobium*, adopted by H. and A. Adams, but comprehending originally such different types (*Bulinus*, *Cassidula*, *Melampus*), that this name ought not to be admitted. Lamarck founded (1801) his genus *Auricula* on the type of *Voluta auris Midæ*, Linn., but in his other works he extended that name to the whole of the family *Auriculidæ*; and most recent authors have adopted the genus *Auricula* in the wider sense, except the above-quoted writers, who returned to Lamarck's original opinion, and use the restricted genus under the same or other names.

Nevertheless the characters of this genus are not perfectly exact, so as to prevent any confusion with other genera: *Auricula subula* and *elongata* are very similar to *Melampus australis* and several others; and *A. frumentum* and *arena*, Pet., form, in H. and A. Adams's Monograph, the subgenus *Siona*, referred to *Cassidula*, together with *A. triticea*, Phil., which seems to be a true *Melampus*. An anatomical examination must, at some future time, assign their true places to these doubtful species.

1. AURICULA AURIS MIDÆ.

B.M.

Shell imperforate, ovate-oblong, thick, heavy, white, covered with a brown periostraca; spire regularly conic, rather blunt; suture linear; whorls eight, flat, sculptured with small tubercles, arranged in series, last whorl forming two-thirds of the total length, slightly angled above, granulated above the angle and at base, wrinkled on the remaining part, and decussated by minute spiral striæ, furnished with a thick varix, which is sometimes acutely prominent; aperture perpendicular, pale flesh-coloured, narrowly semioval, contracted in the middle; body of the penultimate whorl bearing a single strong, compressed, ascending plait; columellar plait smaller, twisted, entering arcuately; peristome thick, white or flesh-coloured, with the margins united by a broad longitudinal deposit, which is elevated triangularly; right margin bearing within a prominent callus, provided, at its middle part, with an indistinct tubercle. Length 84-93, breadth 36-48 mill.

Bulla auris Midæ, Linn. *Syst.* ed. 10. p. 728. n. 344; *Mus. Lud. Ulr.* p. 589. n. 226.

Voluta auris Midæ, Linn. *Syst.* ed. 12. p. 1186. n. 392.

Schröt. Einl. i. p. 196.

Gmel. Syst. p. 3435. n. 1.

- Voluta auris* Midæ, *Born, Mus.* p. 211.
Dilh. Descr. Cat. i. p. 499. n. 1.
Burr. Elem. pl. 15. f. 1.
Wood, Ind. pl. 19. f. 1.
- Helix auris* Midæ, *Müll. Hist. Verm.* ii. p. 110. n. 311.
- Auris* Midæ (bidentata, fusca, clavicula, granulata), *Martini, Conch.* ii. p. 119. t. 43. f. 436-438.
- Bulimus auris* Midæ, *Brug. in Enc. Méth.* i. p. 342. n. 46.
- Ellobium* Midæ, *Bolt. Mus.* p. 105. n. 1347, ed. nov. p. 74. n. 1320.
- Ellobium* Ceramense, *Bolt. Mus.* p. 105. n. 1348.
- Ellobium* tumidum, *Bolt. Mus.* p. 105. n. 1349.
- Ellobium auris* Midæ, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 7; *Gen. rec. Moll.* ii. p. 237. pl. 82. f. 1a.
- Auricula* Midæ, *Lamarck, Syst. d. Anim.* p. 92; *Encycl. Méth.* pl. 460. f. 6; *Hist.* vi. 2. p. 137. n. 1, ed. *Desh.* viii. p. 323.
Férussac, Prodr. p. 102. n. 1.
Lesson, Voy. Coquille, p. 339. pl. 9. f. 1.
 (Oken, *Isis*, 1834, p. 285. t. 2. f. 3. 5-8.)
Leach, Zool. Misc. i. p. 74. pl. 32.
Quoy and Gaimard, Voy. Astrol. ii. p. 156. pl. 14.
Guérin, Icon. Moll. pl. 7. f. 7.
Beck, Ind. p. 102. n. 1.
Potiez and Mich. Gal. Douai, i. p. 204.
Anton, Verz. p. 48. n. 1766.
Küster, Auric. p. 12. t. A. f. 1. t. 2. f. 1-3.
M. E. Gray, Fig. Moll. Anim. pl. 306. f. 12.
- Auricula auris* Midæ, *Blainv. in Dict. Sc. Nat.* iii. *Suppl.* p. 132.
Mörch, Cat. Yold. p. 37. n. 763.
Pfr. Syn. Auric. n. 124; *Mon. Auric.* p. 124.
- Marsyas auris* Midæ, *Oken, Lehrb.* ii. p. 305.
- Geovula* Midæ, *Swains. Malac.* p. 344.
Rumph, Amboin. t. 33. f. HH.
Petiv. Amboin. t. 8. f. 2.
Gualt. Ind. t. 55. f. g.
D'Argenville, Conch. t. 10 (13.) f. g.
Seba, Thes. iii. t. 71. f. 6. 21. 22.
Knorr, Vergnüg. v. t. 25. f. 1.
Laster, Hist. t. 1058. f. 6.
Favanne, Conch. t. 65. f. H 2.
- Hab.* Moluccas, Ceram, New Guinea, Malacca.

2. AURICULA AURIS MALCHI.

B.M.

Shell ovate, white, covered with a dirty brownish periostraca, granulated; whorls six, convex in the middle, with ribs or elevated tubercles on their margin; aperture ovate, white; labrum

thickened externally, sometimes equal, in others thickened at both extremities; axis cut out, quite open. Length 29, breadth 13 lines (Müll.).

Helix auris Malchi, *O. F. Müll. Hist. Verm.* ii. p. 112. n. 312.

Féruss. Prodr. n. 446 (Cochlogena).

Auris Malchi, *Chemn. Conch.* ix. 2. p. 41. t. 121. f. 1037, 1038.

Voluta auris Malchi, *Gmel. Syst.* p. 3437. n. 11.

Dillw. Descr. Cat. i. p. 501. n. 4.

Wood, Ind. t. 19. f. 4.

Bulimus auris Malchi, *Brug. Encycl. Méth.* i. p. 319. n. 36.

Küst. in Chemn. ed. nov. *Bul.* p. 17. n. 13. t. 4. f. 1, 2.

Pfr. Mon. Helic. ii. p. 228. n. 623.

Ellobium australe, *Bolt. Mus.* p. 106. n. 1354, ed. nov. p. 74.

Ellobium auris Malchi, *H. and A. Adams, Gen. rec. Moll.* ii. p. 237.

Auriculus Judæ, *Montf. Conch. Syst.* ii. p. 311 ? (Beck).

Pupa auris Malachi, *Gray in Ann. of Phil.* new ser. ix. p. 413.

Auricula Malchi, *Beck, Ind.* p. 102. n. 2.

Auricula auris Malchi, *Pfr. Mon. Auric.* p. 126.

Hab. — ?

This may be an imperfect and broken specimen of the following species.

3. AURICULA SUBNODOSA.

Shell imperforate, conic-oblong, solid, wrinkled longitudinally, white, covered with a greenish-brown periostraca; spire conic, rather blunt; suture flat, irregular; whorls about nine, granularly decussated along the suture, the upper ones flat, the penultimate convex, body of the penult whorl bearing a thick deep callus, and a strong oblique plait on its middle, the last forming about three-fifths of the total length, with knotty plaits at its upper extremity, slightly decussated below the middle, indistinctly angled at base; aperture perpendicular, sinuately semiovate; columellar plait slight, nearly perpendicular; peristome straight, much thickened within, white; right margin sinuate at its upper extremity. Length 81, breadth 41 mill.

Auricula subnodosa, *Metcalf in Proc. Zool. Soc.* 1851, p. 72.

Pfr. Syn. Auric. n. 125; *Novit. Conch.* i. p. 426. t. 2. f. 10, 11; *Mon. Auric.* p. 127.

Ellobium subnodosum, *H. and A. Adams in Proc. Z. S.* 1854, p. 7.

Hab. Borneo.

4. AURICULA SCHEEPMAKERI.

Shell oblong, heavy, white, covered with an olivaceous-

greenish periostraca; whorls eight, convexly depressed, wrinkled, granulated above; columella scarcely callous, thick and two-plaited at its lower part; aperture elongate, oblique, as long as the spire, bluish within; lip thickened, white, slightly reflexed posteriorly. Length 84, breadth 38 mill. (*Pet.*)

Auricula Scheepmakeri, *Petit in Journ. Conch.* i. 1850, p. 405.

Pfr. Syn. Auric. n. 126; *Mon. Auric.* p. 128.

Ellobium Scheepmakeri, *H. and A. Adams in Proc. Z. S.* 1854, p. 7.

Ellobium Sheepmakeri, *H. and A. Adams, Gen. rec. Moll.* ii. p. 238.

Hab. Isle of Sumatra.

5. AURICULA MÖRCHI.

Shell imperforate, ovate-elliptical, solid, heavy, white, covered with a brownish-olivaceous periostraca; spire short, with the apex for the most part eroded; suture irregular; whorls about seven, scarcely convex, granulated near the suture, which is slightly bordered, last whorl obliquely descending anteriorly, forming about three-fifths of the total length, slightly striated, and very minutely decussated, inflated above, attenuated at base; aperture perpendicular, narrow, slightly angulated at both extremities, bluish within; parietal plait single, placed near the columella, sharp, compressed, slightly ascending; columellar plait smaller, somewhat twisted, nearly perpendicular; peristome straight, thickened within, pale fulvous, with the margins united by a thin, shining deposit. Length 40, greatest breadth 22 mill.

Auricula Mörchi, *Menke in Zeitschr. f. Malak.* 1853, p. 124.

Pfr. Syn. Auric. n. 127; *Novit. Conch.* i. p. 3. n. 5. t. 2. f. 1, 2;

Mon. Auric. p. 128.

Ellobium Mörchi, *H. and A. Adams, Gen. rec. Moll.* ii. p. 237.

Hab. Java? (*Goldfuss.*)

6. AURICULA TURRITA.

Shell imperforate, oblong-turrited, solid, granularly decussated by longitudinal and transverse striae, white, covered with a brownish, rather shining periostraca; spire elongate, with the apex rather blunt, often eroded; whorls seven, inflated near the suture, increasing rapidly, the last as long as the spire, slightly attenuated at base; aperture narrow, acuminate ovate, milk-white within; parietal plaits two, the upper knot-shaped anteriorly, attenuated inwards, the other obliquely produced outwards; columellar plait doubled, scarcely oblique; peristome

straight, sharp, thickened within by a white deposit. Length 50, breadth 16 mill.

Auricula turrita, *Pfr. in Proc. Z. S.* 1854, p. 121; *Syn. Auric.* n. 128; *Novit. Conch.* i. p. 13. n. 22. t. 4. f. 8, 9; *Mon. Auric.* p. 129.

Ellobium turritum, *H. and A. Adams, Gen. rec. Moll.* ii. p. 238.
Hab. Philippine Islands.

7. AURICULA DACTYLUS.

Shell imperforate, ovate-oblong, solid, coarsely striated longitudinally, granulated along the suture by deep furrows (the spiral striæ being slight in the remaining parts), olivaceous-brownish, shining; spire swollen conic, with the apex rather blunt, eroded; whorls seven, the upper ones flat, increasing slowly, the penultimate broad, inflated, the last not descending, forming nearly two-thirds of the total length, indistinctly angled above the middle, very slightly attenuated at base; aperture scarcely oblique, sinuately-semiovate; parietal plaits two, white, the upper knot-shaped, the other strong, oblique; columellar plait very slightly twisted, nearly perpendicular, somewhat grooved inwards, produced outwards to the margin; peristome thick, straight; right margin deeply sinuate above, much thickened within; columellar margin dilated, flat, adnate. Length 52, greatest breadth 25 mill.

Auricula dactylus, *Pfr. in Proc. Z. S.* 1854, p. 151; *Syn. Auric.* n. 129; *Novit. Conch.* i. p. 15. n. 24. t. 5. f. 15, 16; *Mon. Auric.* p. 129.

Ellobium dactylus, *H. and A. Adams, Gen. rec. Moll.* ii. p. 237.
Hab. Borneo.

8. AURICULA AURIS JUDÆ.

B.M.

Shell subrimate, oblong, solid, wrinkled and slightly granulated, white, covered with a fulvous or chestnut-coloured periostraca; spire convexly conic, rather pointed, often eroded; suture slight, irregular; whorls six to seven, scarcely convex, the last descending, forming three-fifths of the total length; aperture perpendicular, acuminate above, broader at base, narrowed by three plaits; parietal plaits two, deeply placed, the upper knot-shaped, blunt, the other strong, somewhat compressed, slightly ascending; columellar plait slightly twisted, nearly perpendicular; peristome thick, with the margins united by a thin deposit; right margin sinuated above, thickened within by an elevated callus. Length 44–53, breadth 18 mill.

Bulla Auris Judæ, *Linn. Syst.* ed. 10. p. 728. n. 345; *Mus. Lud.* *Ulr.* p. 590. n. 257.

- Voluta Auris Judæ*, *Linn. Syst.* ed. 12. p. 1187. n. 393.
Schröt. Einl. i. p. 197. t. 1. f. 9.
Gmel. Syst. p. 3437. n. 10.
Dillw. Descr. Cat. i. p. 500. n. 2.
Wood, Ind. t. 19. f. 2.
- Helix auris Judæ*, *Müll. Hist. Verm.* ii. p. 109. n. 310.
Bulimus auris Judæ, *Brug. in Encycl. Méth.* i. p. 344. n. 78.
Ellobium labrosum, *Bolt. Mus.* p. 105. n. 1350, ed. nov. p. 74.
 n. 1323.
Ellobium subtile, *Bolt. Mus.* p. 105. n. 1351.
Ellobium auris Judæ, *H. and A. Adams in Proc. Z. S.* 1854, p. 7;
Gen. rec. Moll. ii. p. 237.
- Auricula reticulata*, *Schum. Essai*, p. 229.
Auricula Simii, *Féruss. Prodr.* p. 102. n. 2. (*Beck.*)
Auricula Judæ, *Lam. Hist.* vi. 2. p. 137. n. 2; ed. *Desh.* viii.
 p. 324.
Blainv. in Dict. Sc. Nat. Pl. Malac. 55. f. 1.
Lesson, Voy. Coquille, p. 339.
Beck, Ind. p. 103. n. 4.
Pot. et Mich. Gal. Douai, i. p. 204.
Anton, Verz. p. 48. n. 1768.
Reeve, Conch. Syst. ii. pl. 187. f. 4.
Küst. Auric. p. 15. t. 3. f. 1, 2.
Sow. Conch. Man. p. 77. f. 297.
Soul. in Voy. Bonite, pl. 29. f. 19, 20.
M. E. Gray, Fig. Moll. An. pl. 304. f. 4.
Chenu, Lec. Elém. 243. f. 908.
Woodw. Man. Moll. pl. 12. f. 35.
- Auricula auris Judæ*, *Blainv. in Dict. Sc. Nat.* iii.; *Suppl.* p. 132.
Mörch, Cat. Yold. i. p. 37. n. 764.
Pfr. Syn. Auric. n. 130; *Mon. Auric.* p. 130.
Auricula tridentata, "*Mant.*" *Mörch, Cat. Yold.* p. 37. n. 766?
Geovula —?, *Swains. Malac.* p. 344. f. 405.
Lister, Hist. t. 32. f. 30.
Martini, Conch. ii. p. 128. t. 44. f. 449–451.
Bonanni, Mus. Kirch. iii. f. 412?

β. Smaller, more distinctly granularly reticulated; periostraca brownish-olivaceous.

- Voluta auris Midæ*, *Schröt. Fluss. Conch.* p. 314. t. 9. f. 10.
Auricula Judæ, *Féruss. Prodr.* p. 102. n. 3.
Auricula Judæ (le densata), *Beck, Ind.* p. 103.
Auricula Judæ, var. reticulata, *Küst. Auric.* p. 68. t. 5. f. 1, 2.
Auricula reticulata, *Anton, Verz.* p. 48. n. 1767.
Hab. Moluccas, Philippine Islands, Australia.

9. AURICULA PONDEROSA.

"Similar to and probably confused with *A. Judæ*. The aperture does not exceed half the length of the shell, which is much thicker than in the other species." (*Fér.*)

Bonanni, Recr. Suppl. f. 3, et *Mus. Kirch.* f. 412. (*Fér.*)

Auricula ponderosa, *Fér. Prodr.* p. 102. n. 4.

Beck, Ind. p. 102. n. 3.

Pfr. Syn. Auric. n. 131; *Mon. Auric.* p. 131.

Hab. Philippine Islands? (*Beck.*)

10. AURICULA POLITA.

Shell ovate, glandiform, solid, very minutely decussated by slightly wrinkled longitudinal and fine spiral striæ, white, covered with a chestnut-brownish periostraca; spire short, convexly conic, with the apex blunt, eroded; whorls five and a half, moderately convex, the last forming about three-fourths of the total length, ventricose above, attenuated towards the base; aperture perpendicular, narrow, sinuate; parietal plaits two, the upper deeply placed, nodiform, the other stronger, rather transverse; columellar plait imperceptibly twisted, nearly perpendicular, produced to the base; peristome straight, thickened within by a white deposit; right margin sinuate above. Length 36, breadth 16 mill.

Auricula polita, *Metcalfé in Proc. Zool. Soc.* 1851, p. 72.

Pfr. Syn. Auric. n. 132; *Novit. Conch.* p. 27. n. 45. t. 7. f. 12, 13; *Mon. Auric.* p. 132.

Ellobium politum, *H. and A. Adams in Proc. Z. S.* 1854, p. 7; *Gen. rec. Moll.* ii. p. 237.

Hab. Borneo.

11. AURICULA CHINENSIS.

Shell subrimate, ovate-oblong, solid, minutely granulated by longitudinal and spiral striæ, fulvous, with chestnut-coloured streaks; spire conic, blunt; suture linear, somewhat irregular; whorls six, rather flat, the last not descending, forming about three-fifths of the total length, rounded at base; aperture perpendicular, sinuately semioval, broader a little above the base; parietal plaits two, the upper nodiform, the other strong, compressed, rather oblique, both somewhat united externally by a pliciform longitudinal callus; columellar plait strong, twisted; peristome straight, with the margins united by a thin deposit; right margin strongly lipped internally, sinuated above; columellar margin thick, vaulted and reflexed, adnate. Length 28, breadth 14 mill.

Auricula Chinensis, *Pfr. in Proc. Zool. Soc.* 1854, p. 152; *Syn. Auric.* n. 133; *Novit. Conch.* i. p. 18. n. 30. t. 6. f. 1, 2; *Mon. Auric.* p. 132.

Ellobium Chinense, *H. and A. Adams, Gen. rec. Moll.* ii. p. 237. *Hab.* China.

12. AURICULA STAGNALIS.

B.M.

Shell imperforate, rather fusiformly oblong, solid, striated longitudinally, and sculptured transversely with minute papillæ, covered with a yellowish periostraca; spire convexly conic, rather blunt, eroded; suture slight, irregular; whorls six, moderately convex, the last forming about four-sevenths of the total length, attenuated at base; aperture nearly perpendicular, narrowed by three equidistant plaits, broader in front; parietal plaits two, the upper nodiform, the other middle-sized, ascending obliquely: columellar plait twisted, rather prominent: peristome sharp, with the margins united by a thin deposit: right margin scarcely arched, thickened within by a white callus; columellar margin dilated, flat, reflexed. Length 25, breadth 10 mill.

Auricula stagnalis, *D'Orbigny, Synops.* p. 23. n. 3. in *Guér. Voy.* 1835, et *Voy. Am.* p. 325. pl. 42. f. 7, 8.

Reeve, Conch. Syst. ii. pl. 187. f. 9.

Beck, Ind. p. 103. n. 7.

Küster, Auric. p. 70.

C. B. Adams in Ann. Lyc. N. York, v. p. 434.

Pfr. Syn. Auric. n. 134; *Mon. Auric.* p. 133.

Auricula granulina, *Mühlf. MSS.*

Anton, Verz. p. 48. n. 1769. (Compare *Anton in Zeitschr. f. Malak.* 1847, p. 170.)

Auricula papillifera, *Küst. Auric.* p. 25. t. 3. f. 9, 10.

Ellobium granulinum, *H. and A. Adams in Proc. Zool. Soc.* 1854. p. 7.

Ellobium stagnale, *H. and A. Adams, Gen. rec. Moll.* ii. p. 238.

β. Rather more ventricose, upper parietal plait rather indistinct.

Auricula helvacea, *Philippi, MSS.*

Ellobium helvaceum, *H. and A. Adams in Proc. Z. S.* 1854, p. 8.

Hab. Columbia, Panama; var. β. Malacca?

13. AURICULA AURICELLA.

Shell solid, cylindrical, smooth, white; apex acute; aperture rather ovate; columella smooth. Length 8, breadth 3 lines (*Quoy*).

Gualtieri, Ind. t. 55. f. F.

Lister, Hist. t. 577. f. 32 b.

Voluta, n. 145, *Schröt. Einl. i. p. 281.*

Bulinus auricula, *Brug. in Encycl. Méth. i. p. 342. n. 75.*

Tornatella auricula, *Lam. Hist. vi. 2. p. 221. n. 4; ed. Desh. ix. p. 42.*

Auricula auricella, *Féruss. Prodr. p. 103. n. 5.*

Desh. in Lam. Hist. viii. p. 335. n. 20.

Beck, Ind. p. 103. n. 5.

Küst. Auric. p. 47. t. 7. f. 12, 13.

Pfr. Syn. Auric. n. 135; Mon. Auric. p. 134.

Auricula auritacea, *Quoy et Gaim. Voy. Astrol. ii. p. 172. pl. 13. f. 41, 42.*

Leuconia auricella, *H. and A. Adams in Proc. Zool. Soc. 1854, p. 37. n. 6.*

Hab. Isle of Guam (*Quoy*); Australia (*Férussac*).

A doubtful species, perhaps identical with the following.

14. AURICULA INCRASSATA.

Shell imperforate, elongately ovate, solid, heavy, nearly smooth, shining, white; spire produced, rather blunt; suture slight, somewhat irregular; whorls five, moderately convex, increasing gradually, the last forming three-fifths of the total length, slightly inflated along the suture, somewhat attenuated at base; aperture nearly perpendicular, sinuately semioval; parietal plait single, strong, oblique; columellar plait smaller, twisted obliquely; peristome blunt; right margin sinuate above, then thickened internally; columellar margin appressed, produced upwards into a thin callus. Length 18, breadth 7 mill.

Ellobium incrassatum, *H. and A. Adams in Proc. Z. S. 1854, p. 8. n. 14; Gen. rec. Moll. ii. p. 237.*

Auricula incrassata, *Pfr. Syn. Auric. n. 136; Novit. Conch. i. p. 13. n. 21. t. 4. f. 6, 7; Mon. Auric. p. 135.*

Hab. Loon, Isle of Bohol (*H. Cuming*).

15. AURICULA GANGETICA.

Shell imperforate, fusiformly ovate, solid, very minutely granulated, whitish, with a deciduous greenish periostraca; spire conic, acute; suture impressed, rather regular; whorls seven, the upper ones moderately convex, the penultimate more convex, the last forming three-fifths of the total length, oblong, attenuated in front; aperture perpendicular, semioval, acuminate; parietal plaits two, the upper obsolete, the other oblique and compressed; columellar plait high, slightly twisted; peristome

straight; right margin almost imperceptibly sinuate at its upper part, thickened within behind; columellar margin dilated, flat, adnate. Length 20, greatest breadth 9 mill.

Auricula Gangetica, *Bens. MSS.*

Pfr. in Malak. Bl. 1855, p. 7; *Norit. Conch.* i. p. 46. n. 80.

t. 12. f. 13, 14; *Mon. Auric.* p. 135.

Ellobium Gangeticum, *H. and A. Adams, Gen. rec. Moll.* ii. p. 237.

Hab. Hooghly River, near Calcutta.

16. AURICULA PALLIDA.

Shell elongately ovate, slightly striated, pale; whorls six, flat, narrow; aperture oblong; peristome slightly lipped; columella furnished with two plaits. Length nearly 8, breadth $3\frac{2}{3}$ lines (*Küst.*).

Auricula pallida, *Sowerby in Beech. Voy.* p. 146. pl. 38. f. 27.

Küst. Auric. p. 51. t. 7. f. 8 (from *Beck*).

Pfr. Syn. Auric. n. 137; *Mon. Auric.* p. 135.

Auricula pygmæa, ("Gray in *Beech. Voy.* 38. 27.") *Beck, Ind.* p. 103. n. 6.

Ellobium pallidum, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 7; *Gen. rec. Moll.* ii. p. 237.

Hab. Columbia (*Beck*).

A doubtful species, imperfectly described and figured.

17. AURICULA TORNATELLIFORMIS.

Shell imperforate, fusiformly ovate, rather thin, slightly wrinkled longitudinally, minutely granulated by spiral striæ, scarcely shining, translucent, white, covered partly with a fulvous periostraca; spire regularly conic, with the apex pointed; suture linear; whorls eight, scarcely convex, the last forming three-fifths of the total length, indistinctly angled above, attenuated at base; aperture nearly perpendicular, oblong semi-ovate, shining white within, bearing two plaits, one on the columella, twisted, nearly perpendicular, the other approximated to it, stronger, oblique on the body of the penultimate whorl; peristome slightly thickened; right margin sinuate above. Length 24, breadth $10\frac{1}{2}$ mill.

Auricula tornatelliformis, *Petit in Proc. Zool. Soc.* 1842, p. 201 :

Journ. Conch. iv. 1853, p. 412. pl. 12. f. 5, 6.

Pfr. Syn. Auric. n. 138; *Mon. Auric.* p. 136.

Ellobium tornatelliforme, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 7; *Gen. rec. Moll.* p. 238.

Hab. Tornhay, Isle of Negros, Philippines (*H. Cuming*).

18. AURICULA SEMISCULPTA.

Shell imperforate, elliptically ovate, thin, slightly shining, faintly striated longitudinally, rather pellucid, yellowish; spire convexly conic, blunt; suture linear; whorls seven, rather flat; sculptured above with spiral series of impressed points, the last forming about two-thirds of the total length, attenuated at base, closely striated spirally below the middle; aperture scarcely oblique, narrowly semioval; parietal plait single, middle-sized, slightly ascending near the columella, which is callous, thickened, white, and provided with a single oblique plait; peristome sharp; right margin arched forwards at its middle part, with a thin white internal lip. Length 19, greatest breadth 9 mill.

Ellobium semisculptum, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 9. n. 19; *Gen. rec. Moll.* ii. p. 237.

Auricula semisculpta, *Pfr. Syn. Auric.* n. 139; *Mon. Auric.* p. 136.
Hab. Gambier Islands, Pacific Ocean.

19. AURICULA PELLUCENS.

Shell elliptical, rather thin, obsoletely striated, shining, translucent, greyish-yellow; spire conic, often eroded; suture slightly bordered, irregular; whorls six, the upper ones moderately convex, the last forming two-thirds of the total length, scarcely attenuated at base; aperture perpendicular, narrowly semioval; parietal plait single, slightly ascending near the columella; columellar plait rather twisted, nearly perpendicular; peristome simple, with the margins united by a thin deposit; right margin slightly dilated at its middle part; columellar margin callous, adnate. Length 14–23, greatest breadth 7–11½ mill.

Auricula pellucens, *Menke, Syn.* p. 78; ed. ult. p. 131.

Küst. Auric. p. 17. t. 2. f. 6, 7.

Krauss, Südaf. Moll. p. 82.

Pfr. Syn. Auric. n. 140; *Mon. Auric.* p. 137.

Auricula Dominicensis, *Fér. Prodr.* p. 103. n. 6?

Beck, Ind. p. 103. n. 8?

Conovulus pellucens, *Voigt in Cuvier Thier.* iii. p. 111.

Ellobium Ceylonicum, *H. and A. Adams in Proc. Z. S.* 1854, p. 8. n. 12.

Ellobium pellucens, *H. and A. Adams, Gen. rec. Moll.* ii. p. 237.

Hab. Demerara (*Menke*); Natal (*Krauss*); Ceylon (*Gardner*); and West Indies? (*Férussac*).

20. AURICULA SIMPLEX.

Shell imperforate, oblong, solid, slightly wrinkled longitudi-

dinally, shining, pale fulvous; spire convexly conic, with the apex blunt; whorls five and a half, moderately convex, faintly striated spirally along the suture, the last forming three-fifths of the total length, marked with brownish streaks, indistinctly angled above, scarcely attenuated at base; aperture nearly perpendicular, acuminate semiovate; parietal plaits two, the upper one obsolete, the other rather oblique; columellar plait slightly twisted, nearly perpendicular; peristome sharp; right margin scarcely thickened within, slightly sinuate above; columellar margin callous, dilated, adnate. Length 19, breadth $7\frac{1}{2}$ mill.

Ellobium simplex, *H. and A. Adams in Proc. Z. S.* 1854, p. 8. n. 13; *Gen. rec. Moll.* ii. p. 238.

Auricula simplex, *Pfr. Syn. Auric.* n. 141; *Mon. Auric.* p. 138. *Hab.* —?

21. AURICULA DUNKERI.

Shell imperforate, fusiformly oblong, solid, smooth, very faintly striated longitudinally, covered with a fulvous horn-coloured periostraca; spire convexly conic, with the apex pointed; suture linear, rather irregular; whorls about eight, rather flat, the upper ones irregularly eroded, the last forming about two-thirds of the total length, slightly attenuated at base; aperture nearly perpendicular, narrowly semiovate; columella slightly twisted and plaited; parietal plaits two, one middle-sized, oblique below the middle, the other indistinct next the columella; peristome sharp, somewhat thickened within; columellar margin scarcely dilated, reflexed, adnate. Length 20, breadth $7\frac{1}{2}$ mill.

Auricula Dunkeri, *Pfr. in Zeitschr. f. Malak.* 1853, p. 125; *Syn. Auric.* n. 142; *Mon. Auric.* p. 138.

Ellobium Dunkeri, *H. and A. Adams, Gen. rec. Moll.* ii. p. 237.

Hab. Borneo.

22. AURICULA OPARICA.

Shell imperforate, fusiformly subulate, smooth, pale fulvous; spire convexly turritid, with the apex pointed; suture linear, irregular; whorls eight, flat, the last a little longer than the spire, much attenuated at base; aperture nearly perpendicular, narrow, acuminate semiovate, with three plaits; parietal plait single, small, rather compressed below the middle; columellar plaits two, indistinct, parallel to each other, the lower twisted and truncate; peristome simple, sharp, right margin rather appressed above. Length 13, breadth 5 mill.

Ellobium Oparicum, *H. and A. Adams in Proc. Z. S.* 1854, p. 9. n. 18; *Gen. rec. Moll.* ii. p. 237.

Auricula Oparica, *Pfr. Syn. Auric.* n. 143; *Mon. Auric.* p. 139.
Hab. Opara, Society Islands.

23. AURICULA SEMIPLICATA.

Shell imperforate, rather cylindrical, olivaceous-fulvous; spire short, terminating in a blunt, eroded cone; whorls about six, the penultimate one flat, marked with slightly arched striæ, the last forming two-thirds of the total length, folded above, smooth on the remaining part, rounded at base; aperture rather oblique, narrowly semiovate, three-plaited; one middle-sized, compressed plait near the columella, and two parallel, nearly perpendicular plaits upon the columella; peristome simple, straight, right margin slightly sinuate. Length 14, greatest breadth 5 mill.

Ellobium semiplicatum, *H. and A. Adams in Proc. Z. S.* 1854, p. 8. n. 15; *Gen. rec. Moll.* ii. 237.

Auricula semiplicata, *Pfr. Syn. Auric.* n. 144; *Norit. Conch.* i. p. 19. n. 31. t. 6. f. 3, 4; *Mon. Auric.* p. 139.

Hab. Singapore (*Taylor*).

24. AURICULA SACCATA.

Shell shortly and deeply rimate, club-shaped, solid, faintly striated, irregularly eroded, slightly shining, fuscous-yellow; spire elongately conic, pointed; suture flat, irregular; whorls eight to nine, flat, the last almost as long as the spire, dilated towards the base, which is swollen; aperture perpendicular, narrowly ovate; parietal plait single, small, rather transversely placed on the middle; columellar plait indistinctly bidenticulate; peristome blunt; right margin sinuate above, thickened within at its middle part; columellar margin dilated, callous, spreading. Length 14, greatest breadth 6 mill.

Ellobium elongatum, var., *H. and A. Adams in Mus. Cuming.*

Auricula saccata, *Pfr. in Proc. Z. S.* 1854, p. 121; *Syn. Auric.* n. 145; *Mon. Auric.* p. 140.

Ellobium saccatum, *H. and A. Adams, Gen. rec. Moll.* ii. p. 237.

Hab. Manilla (*H. Cuming*).

25. AURICULA ELONGATA.

Shell subrimate, fusiformly cylindrical, faintly striated longitudinally, slightly shining, of a blackish chestnut colour or greenish-fulvous; spire conic, with rather convex outlines, and the apex pointed, often truncate; suture linear, irregular anteriorly; whorls seven, flat, the last a little longer than the spire,

rounded and slightly attenuated at base; aperture nearly perpendicular, narrow, acuminate ovate; parietal plait single, small, compressed near the columella; parietal plait minute, nearly perpendicular, slightly twisted; peristome straight, blunt; right margin almost rectilinear, callous within; columellar margin dilated, adnate. Length $12\frac{1}{2}$, breadth 5 mill.

Auricula elongata, *Parreyss*, *MSS.*

Küst. Auric. p. 53. t. 8. f. 6-8.

Jay, Catal. 1850, p. 264. n. 6145.

Pfr. Syn. Auric. n. 146; *Mon. Auric.* p. 140.

Auricula Buddii, *Parreyss*, *MSS.*

Ellobium elongatum, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 8. n. 10; *Gen. rec. Moll.* ii. p. 237.

β . More ventricose, rather fusiform, shining, fulvous; spire conic, with rather concave outlines.

γ . Larger, fusiformly ovate, chestnut-coloured above. Length 16, breadth 7 mill.

Hab. Sandwich and Feejee Islands; the var. β . and γ . Bureos, Philippines.

26. AURICULA SUBULA.

Shell imperforate, rather fusiform, solid, smooth, white, covered with a fulvous yellowish periostraca; spire conic, rather pointed; suture whitish, irregular; whorls seven, flat, the last a little longer than the spire, attenuated towards the base; aperture perpendicular, semiovate, white and shining within; parietal plait single, compressed and obliquely entering below the middle; columellar plaits two, smaller, twisted obliquely, parallel to each other; peristome simple, straight, slightly thickened within. Length 14, breadth 5 mill.

Auricula subula, *Quoy and Gaim. Voy. Astrol.* ii. p. 171. pl. 13. f. 39, 40.

Desh. in Lam. Hist. viii. p. 334. n. 18.

Küst. Auric. p. 53. t. 8. f. 9, 10.

Jay, Catal. 1850, p. 265. n. 6178.

Adams and Reece, Voy. Samarang, p. 55. pl. 14. f. 15.

Pfr. Syn. Auric. n. 147; *Mon. Auric.* p. 141.

Pythia subula, *Beck, Ind.* p. 104. n. 5.

Ellobium subula, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 8. n. 11; *Gen. rec. Moll.* ii. p. 238. pl. 82. f. 1.

β . With three parallel, rather indistinct plaits.

Hab. Port Carteret, New Ireland (*Quoy*); Celebes (*A. Adams*); the var. β . Isle of Negros, Philippines (*H. Cuming*).

27. AURICULA ORYZA.

Shell imperforate, ovately fusiform, solid, smooth, shining; alabaster-white, with a single white band; spire produced, conic, with the apex pointed; suture linear; whorls eight, flat, the last about as long as the spire, slightly attenuated at base; aperture perpendicular, narrowly semioval; parietal plait single, small, transverse below the middle; columellar plaits two, minute, oblique, approximate; peristome nearly simple; right margin marked within with two indistinct transverse ribs; columellar margin strongly callous, adnate. Length 10, breadth 4 mill.

Ellobium oryza, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 8. n. 17; *Gen. rec. Moll.* ii. p. 237.

Auricula oryza, *Pfr. Syn. Auric.* n. 148; *Novit. Conch.* i. p. 28. n. 47. t. 7. f. 17-19; *Mon. Auric.* p. 141.

Hab. Annaa, Society Islands.

28. AURICULA PUSILLA.

Shell imperforate, oblong-subulate, solid, smooth, shining, whitish; spire convexly conic, with the apex pointed; whorls seven, rather flat, somewhat imbricate, the last as long as the spire, slightly attenuated at base; aperture nearly perpendicular, narrow, rather elliptical; parietal plait single, middle-sized, rather transverse; columellar plaits two, small, oblique, parallel to each other; peristome sharp, with the margins united by a callus; right margin somewhat thickened within, slightly sinuate above, retreating at base; columellar margin callous, adnate. Length 7, breadth $2\frac{2}{3}$ mill.

Ellobium pusillum, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 8. n. 16; *Gen. rec. Moll.* ii. p. 237.

Auricula pusilla, *Pfr. Syn. Auric.* n. 149; *Novit. Conch.* i. p. 39. n. 68. t. 10. f. 10-12; *Mon. Auric.* p. 142.

Hab. Isle of Negros, Philippines.

(*SIONA*, subgenus of *CASSIDULA*, *H. and A. Adams.*)

29. AURICULA FRUMENTUM.

Shell imperforate, ovate-oblong, solid, rather smooth, slightly shining, brownish; spire short, convexly conoidal, mucronate; suture linear; whorls five, the upper ones flat, the penultimate convex, the last forming three-fourths of the total length, somewhat descending anteriorly, rounded at base; aperture perpendicular, linear, with three plaits: the upper plait deeply placed, indistinct; the two others approximate; one parietal, compressed,

horizontal; the last columellar, thick, twisted; peristome bordered with a chestnut streak; right margin thin above, then thickened internally. Length $6\frac{1}{2}$, breadth 3 mill.

Auricula (*Conovulus*) *frumentum*, *Petit in Revue Zool.* 1842, p. 105.

Auricula frumentum, *Pfr. Syn. Auric.* n. 150; *Mon. Auric.* p. 142.

Cassidula (*Siona*) *frumentum*, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 32. n. 15.

Cassidula (*Sarnia*) *frumentum*, *H. and A. Adams, Gen. rec. Moll.* ii. p. 239.

Hab. Callao, Peru (*Petit*), and Marquesas Islands.

30. AURICULA AVENA.

Shell imperforate, cylindrical, rather solid, nearly smooth, sculptured irregularly with striæ of growth, yellowish-fusca; spire convexly conoidal, rather blunt, pale; suture linear; whorls five, flat, the last forming more than three-fourths of the total length, indistinctly angled above, slightly attenuated at base; aperture perpendicular, narrowly semiovate, with three plaits; upper plait small, knot-shaped; second plait parietal, thick, rather horizontal; columellar plait callous, dentiform; peristome straight, blunt; right margin sinuate above, thickened within at its middle part, basal margin passing immediately into the columellar plait. Length $6\frac{1}{2}$, breadth $3\frac{1}{2}$ mill.

Auricula (*Conovulus*) *avena*, *Petit in Revue Zool.* 1842, p. 106.

Auricula avena, *Kist. Auric.* p. 48. t. 7. f. 17-19 (?).

Pfr. Syn. Auric. n. 151; *Mon. Auric.* p. 143.

Cassidula (*Siona*) *avena*, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 32. n. 14.

Cassidula (*Sarnia*) *avena*, *H. and A. Adams, Gen. rec. Moll.* ii. p. 239.

Hab. Near Valparaiso, Chili.

31. AURICULA ? PELLUCIDA:

B.M.

"Shell very small, ovate, obtuse, whitish, shining; spire short; longitudinally and transversely finely striated; labrum not reflexed; columella with two folds."—*Cooper*.

Auricula pellucida, *Cooper, Microscopic Journ.* 1841, p. 16.

Melampus (*Tralia*) *pellucidus*, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 11.

Pfr. Mon. Auric. p. 58.

Tralia pellucida, *H. and A. Adams, Gen. rec. Moll.* ii. p. 244.

Hab. Van Diemen's Land.

9. BLAUNERIA, Shuttleworth.

Shell imperforate, oblong-turrited, thin; aperture narrow, elongate; body of the penultimate whorl bearing a single plait near the columella, which is rather truncate; peristome simple, straight. Animal showing the characters of the family of the *Auriculidæ*, not of *Helicidæ*.

Blauneria, *Shuttl. Diagn. n. Moll.* no. 6. p. 148.

Pfr. in Malak. Bl. 1854, i. p. 152; *Mon. Auric.* p. 153.

Achatinæ et Tornatellinæ, sp., *Pfr.*, olim.

Oleacinæ, sp., *H. and A. Adams.*

The only species, when first described by Dr. L. Pfeiffer in 1839, was referred, with doubt, to the genus *Achatina*, then removed to *Tornatellina*. Dr. Gundlach has observed the animal, and on account of its peculiar-formed shell it has been made into a genus.

1. BLAUNERIA PELLUCIDA.

Shell sinistral, oblong-turrited, extremely thin, smooth, glassy; spire turrited, with the apex rather blunt; suture very slight; whorls six and a half to seven, flat, the last a little shorter than the spire; parietal lamella entering; aperture narrow, lanceolate; peristome sharp, with the columellar margin extremely short. Length 5, breadth $1\frac{2}{3}$ mill.

Achatina ? pellucida, *Pfr. in Wiegman. Arch. f. Nat.* 1840, i. p. 252.

Gould in Binn. Terr. Moll. Un. St. ii. p. 294. pl. 53. f. 2.

Tornatellina Cubensis, *Pfr. Symb.* ii. p. 130; *Mon. Helic.* ii. p. 391. n. 3.

Küst. Pupa, p. 151. t. 18. f. 16, 17.

Blauneria pellucida, *Pfr. Syn. Auric.* n. 164; *Mon. Auric.* p. 153.

Odostomia ? Cubensis, *Poey, Memor.* i. p. 394.

Oleacina (Strobilus) Cubensis, *H. and A. Adams, Gen. rec. Moll.* ii. p. 106.

Hab. Cuba ! Jamaica (*C. B. Adams*); Portorico (*Blauener*); Florida.

10. ALEXIA, Leach.

Shell oblong-ovate, thin; spire acuminate; last whorl large, rounded at base; aperture rather broad, acuminate ovate; body of the penultimate whorl bearing one to five tubercular plaits; columellar plait oblique; peristome slightly expanded, with the right margin callous or toothed within.

Alexia, *Leach*, 1818, *Catal.*

Alexia, Gray, 1847, in *Proc. Zool. Soc.* xv. p. 179.

Mörch, *Cat. Yold.* i. p. 38.

H. and A. Adams in *Proc. Zool. Soc.* 1854, p. 32; *Gen. rec. Moll.* ii. p. 241.

Pfr. in *Mulak. Bl.* i. 1854, p. 151; *Mon. Auric.* p. 144.

Phytia, Gray, 1821, in *Lond. Med. Repos.* xv. p. 231.

Ovatella (subgenus of *Conovulus*), Gray, 1840, in *Turt. Man.* p. 225.

Turbo, sp., *Walk.*

Voluta, sp., *Mont., Mat., Wood, &c.*

Auricula, sp., *Drap., Fér., Lam., &c.*

Jaminia, sp., *Brown.*

Carychium, sp., *Fér., Mich.*

Ovatella, sp., *Brown.*

Acteon, sp., *Flem.*

Pythia (part), *Beck.*

Melampus, sp., *Stimps.*

The animals ascribed to this genus are really terrestrial, as Moquin-Tandon and others have ascertained. Except *A. denticulata*, the shells of all the species are very similar in habit, although the animals exist in countries remote from each other; but by an exact examination there will be found good characters for distinguishing the several species.

They may be divided into two sections:—

A. Labrum furnished with distinct teeth § 1. No. 1- 2

B. Labrum callous, bearing sometimes a *single*
indistinct tooth § 2. — 3-12

§ 1. *Labrum distinctly toothed.*

1. ALEXIA DENTICULATA:

B.M.

Shell imperforate, elliptically ovate, thin, pellucid, smooth, shining, horn-coloured yellowish; spire exerted, conic, pointed; suture bordered; whorls seven, scarcely convex, the last as long as the spire, attenuated at base; aperture nearly perpendicular, narrowly semioval; parietal teeth three, the upper two minute, nodiform (the uppermost sometimes obsolete), the third compressed, entering transversely; columellar plait oblique, twisted; peristome simple, straight, sharp; right margin slightly arcuate, furnished within with three to six more or less distinct teeth, which are elongated inwards; columellar margin scarcely dilated. Length 10, breadth 4 mill.

Voluta denticulata, *Mont. Test. Brit.* p. 234. pl. 20. f. 5.

Mat. and Rack. in Linn. Trans. viii. p. 130.

- Voluta denticulata*, *Pult. Dors. Cat.* p. 44. pl. 18. f. 1.
Dillw. Cat. i. p. 506. n. 18.
Wood, Ind. p. 90. pl. 19. f. 18.
Turt. Conch. Dict. p. 249.
Berkeley in Zool. Journ. v. p. 428. pl. 19. f. 3.
Voluta ringens et *V. reflexa*, *Turt. Conch. Dict.* pp. 250, 251.
Turbo bidentatus, *Walk. Test. min. rar.* f. 50-53 (*Montagu*).
Jaminea denticulata, *Leach; Brown, Conch. Gr. Br.* t. 51. f. 6.
Auricula myosotis, *a., Fér. Prodr.* p. 103.
Jeffr. in Linn. Trans. xvi. p. 368.
Auricula tenella, *Menke, Syn.* ed. 4. p. 131; *Zeitschr. f. Malak.* 1845, p. 33.
Auricula personata, *Pot. et Mich. Gal. Douai*, i. p. 205. n. 14.
Desh. in Lam. Hist. viii. p. 334. n. 17.
Phil. Sicil. ii. p. 118.
Auricula denticulata, *Küst. Auric.* p. 54. t. 8. f. 1-5.
Jay, Cat. 1850, p. 264. n. 6143.
Acteon denticulatus, *Flem. Brit. An.* p. 137.
Carychium personatum, *Mich. Compl. à Drap.* p. 73. t. 15. f. 42, 43.
Anton, Verz. p. 48. n. 1763.
Pythia denticulata, *Beck, Ind.* p. 103. n. 1.
Conovulus (Ovatella) denticulatus, *Gray, Man.* p. 225. pl. 12. f. 144 (p. 219. f. 4, 5).
Forb. and Hanl. Brit. Moll. iv. p. 194. pl. 125. f. 3.
Alexia denticulata, *Leach, Catal.* 1818.
Gray in Proc. Zool. Soc. 1847, p. 179.
M. E. Gray, Fig. Moll. Anim. pl. 305. f. 1.
H. and A. Adams in Proc. Zool. Soc. 1854, p. 32. n. 1; *Gen. rec. Moll.* ii. p. 241. pl. 82. f. 5, 5 a.
Pfr. Syn. Auric. n. 152; *Mon. Auric.* p. 145.
Alexia personata, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 32. n. 2; *Gen. rec. Moll.* ii. p. 241.
 β. More ventricose, horn-coloured reddish-brown.
Auricula tenella, *Küst. Auric.* p. 57. t. 8. f. 15-17.
Hab. On the coasts of North Sea; also of the Mediterranean and Adriatic Seas; in Britain, Germany, France, Istria, Dalmatia, Italy.

2. ALEXIA BOTTERIANA.

Shell oblong-fusiform, thin, pellucid, whitish; whorls seven and a half, bordered; aperture scarcely longer than the spire; columella four-plaited; labrum furnished within with five plaits. Length $2\frac{3}{4}$, breadth $1\frac{1}{4}$ line. (*Phil.*)

Auricula Botteriana, *Philippi in Zeitschr. f. Mal.* 1846, p. 97.

Alexia Botteriana, *Pfr. Syn. Auric.* n. 153; *Mon. Auric.* p. 147.

H. and A. Adams, Gen. rec. Moll. ii. p. 241.

Ellobium Botterianum, "*Phil.*," *H. & A. Adams, Gen.* ii. p. 237?

Hab. Island of Lesina, Dalmatia.

§ 2. *Labrum callous, without teeth or with a single tooth.*

3. *ALEXIA PAYRAUDEAUI.*

Shell ovate-turritid, rather solid, nearly smooth, silk-shining; purplish-black; spire turritid conic, with the apex pointed; suture rather deep, pale; whorls nine, moderately convex, the last about as long as the spire, provided usually with a sharp varix, somewhat attenuated at base; aperture scarcely oblique, sinuately ovate; parietal teeth two, the upper minute, nodiform, the other compressed, entering horizontally; columellar plait oblique, rather truncate; peristome callous, pale, with the right margin rather sinuate above, then reflexed, furnished within with a callus, which is parallel to the margin; columellar margin slightly dilated, adnate. Length 11, breadth 5 mill.

Auricula myosotis, *Payr. Cat.* p. 104.

Auricula Payraudeaui, *Shuttlew. in litt.*

Alexia Payraudeaui, *Pfr. Syn. Auric.* n. 154; *Mon. Auric.* p. 147.

H. and A. Adams, Gen. rec. Moll. ii. p. 241.

Hab. Corsica; also near Nizza and Trieste.

4. *ALEXIA BIASOLETTIANA.*

Shell subimate, fusiformly ovate, rather solid, faintly striated, shining, chestnut-coloured or reddish horn-coloured; spire inflatedly conic, with the apex acutely mucronate; suture deep, simple; whorls seven, moderately convex, the last ventricose, longer than the spire, attenuated in front; aperture nearly perpendicular, narrowly semiovate; parietal teeth two, the upper deep, punctiform, the other very much compressed, transverse; columellar plait middle-sized, oblique, slightly produced outwards; peristome sharp, scarcely expanded; right margin bearing within one or two indistinct tubercles; columellar margin scarcely dilated, rather adnate. Length $9\frac{1}{2}$, breadth $4\frac{1}{2}$ mill.

Auricula Venetiensis, *Mühlf. in Villa Disp. Syst.* p. 30?

Auricula Veneta, *Martens, Ital.* ii. p. 433.

Auricula Biasoletiana, *Küst. Auric.* p. 56. t. 8. f. 18-20.

Auricula myosotis, *De Botta et Mart. Moll. Ven.* p. 75.

Alexia Biasoletiana, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 33. n. 7; *Gen. rec. Moll.* ii. p. 241.

Alexia Biasoletiana, *Pfr. Syn. Auric.* n. 155; *Mon. Auric.* p. 148.
Hab. Coasts of Mediterranean Sea, near Nizza, Trieste, Venice,
 and in Dalmatia.

5. ALEXIA MYOSOTIS.

B.M.

Shell ovate-turrit, rather solid, minutely striated longitudinally, slightly shining, fuscous or pale fulvous; spire elongately conic, pointed; suture impressed, simple; whorls eight, moderately convex, the last a little longer than the spire, in some specimens varicose, rounded in front; aperture perpendicular, semiovate; parietal teeth two, the upper knot-shaped, the other forming a horizontally entering plait; columellar plait callous, twisted downwards; peristome slightly expanded, somewhat thickened; right margin bearing within, above the middle, a more or less distinct tubercle; columellar margin reflexed, adnate. Length 10, breadth $4\frac{1}{2}$ mill.

Auricula myosotis, *Drap. Hist.* p. 56. pl. 3. f. 16, 17.

Férussac, Prodr. p. 103. n. 8.

Desh. in Encycl. Méth. ii. p. 88. n. 1.

Lam. Hist. vi. p. 140. n. 9, ed. *Desh.* viii. p. 330.

Potiez et Mich. Gal. Douai, i. p. 205.

Philippi, Moll. Sicil. i. p. 143.

Küst. Auric. p. 19. t. 1. f. 15-17.

Graells, Cat. Mol. terr. Esp. p. 10.

Morelet, Moll. Port. p. 76. n. 3.

Moquin-Tand. in Journ. Conch. 1851, ii. p. 348.

Auricula denticulata, *Gould, Massach.* p. 199. f. 129.

De Kay, Moll. New York, p. 58. pl. 5. f. 91, 93 ?

Carychium myosotis, *Férussac, Syst. Conch.* p. 54. n. 2.

Mich. Compl. à Drap. p. 73.

Drouet, En. Moll. France, p. 24. n. 208.

Phytia myosotis, *Gray in Lond. Med. Repos.* xv. p. 231.

Auricule pygmée, *Blainv. in Dict. Sc. Nat. Pl. Malac.* 54. f. 6.

Pythia myosotis, *Beck, Ind.* p. 104. n. 2.

Alexia myosotis, *Mörch, Cat. Yold.* p. 38. n. 785.

H. and A. Adams in Proc. Zool. Soc. 1854, p. 33. n. 4; *Gen. rec. Moll.* ii. p. 241.

Pfr. Syn. Auric. n. 156; *Mon. Auric.* p. 148.

Melampus denticulatus, *Stimps. Shells of New England*, p. 52 ?

Conovulus denticulatus, var., *Forbes and Hanl. Brit. Moll.* iv. p. 195. pl. 125. f. 4, 5.

β. Much elongated, acuminate, thin, rufous horn-coloured, with pale blood-red oblique bands and the whorls convex.

Auricula myosotis, var. *adriatica*, *Küst. Auric.* p. 69. t. 8. f. 23, 24.

γ. Much elongated, conic, acuminated, thin, scarcely shining, horn-coloured rufous.

Auricula myosotis, var. *elongata*, *Küst. Auric.* p. 69. t. 8. f. 21, 22.

Hab. Coasts of Mediterranean Sea and in Britain; also in America; var. β. in Istria and Dalmatia; var. γ. extremely rare near Zara.

6. ALEXIA CILIATA.

Shell ovate-conoidal, brownish-horny, very minutely striated, with the apex pointed; whorls seven to eight, narrow, attenuated, ciliated beneath the suture, the last one dilated; columella often bearing two teeth. Length 8-9 mill. (*Mör.*).

Auricula ciliata, *Morelet, Moll. du Portugal*, p. 77. pl. 7. f. 4.

Alexia ciliata, *Pfr. Mon. Auric.* p. 150.

Hab. Portugal.

7. ALEXIA DUBIA.

Shell ovate, light, horny; whorls six, the last the largest; aperture elongate; columella three-plaited. Height $2\frac{1}{2}$ lines (*Cantr.*).

Auricula dubia, *Cantraine in Bull. Brux.* ii. 1836, p. 383.

Myosotis brevis, *Ziegl. MSS.*

Pythia dubia, *Beck, Ind.* p. 104. n. 3.

Alexia dubia, *Pfr. Syn. Auric.* n. 157; *Mon. Auric.* p. 150.

Hab. Coasts of Dalmatia (*Cantr.*).

8. ALEXIA REFLEXILABRIS.

B.M.

Shell imperforate, ovate-conic, rather solid, nearly smooth, shining, dark chestnut-coloured; spire conic, pointed; suture slight, bordered; whorls eight, moderately convex, the last a little longer than the spire, rounded at base; aperture nearly perpendicular, wide, ovate; parietal plait single, compressed, entering; columellar plait twisted, flat, scarcely prominent; peristome bordered with white, somewhat expanded; columellar margin dilated, adnate. Length 9, breadth 4 mill.

Auricula myosotis, *D'Orbigny, Synops.* p. 23.

Auricula reflexilabris, *D'Orbigny, Voy. Amér.* p. 326. pl. 42. f. 1-3.

Pythia reflexilabris, *Beck, Ind.* p. 104. n. 4.

Alexia reflexilabris, *Mörch, Cat. Föld.* p. 38. n. 786.

H. and A. Adams in Proc. Zool. Soc. 1854, p. 33. n. 3; *Gen. rec. Moll.* ii. p. 241.

Pfr. Syn. Auric. n. 159; *Mon. Auric.* p. 150.

Hab. Callao near Lima.

9. ALEXIA MICROSTOMA.

Shell fusiformly ovate, solid, striated and somewhat wrinkled, scarcely shining, reddish-brown horn-coloured; spire convexly conic, pointed; suture very slight, indistinctly bordered; whorls eight, rather flat, the last shorter than the spire, slightly attenuated at base; aperture oblique, semioval; parietal tooth single, compressed, entering; columellar plait minute, dentiform; peristome thin, indistinctly expanded, furnished with a callous lip behind the edge. Length 8, breadth $3\frac{1}{2}$ mill.

Auricula microstoma, *Küster, Auric.* p. 52. t. 1. f. 18, 19.

Leuconia microstoma, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 56. n. 3.

Alexia microstoma, *Pfr. Syn. Auric.* n. 160; *Mon. Auric.* p. 151.

H. and A. Adams, Gen. rec. Moll. ii. p. 241.

Hab. Near Budua, Dalmatia (*Küst.*).

10. ALEXIA OBSOLETA.

Shell imperforate, ovate-elliptical or somewhat turritid, thin, very faintly striated, not shining, purplish chestnut-coloured or wax-coloured; spire rather convexly conic, pointed; suture bordered with an impressed line; whorls eight, moderately convex, the last scarcely longer than the spire, sometimes varicose, slightly attenuated at base; aperture rather oblique, semioval; parietal plait single, strong, compressed, entering below the middle, very rarely with an additional obsolete second nodiform tooth; columellar plait callous, twisted, oblique; peristome narrowly expanded; right margin lipped within, not toothed; columellar margin reflexed, adnate. Length 10, breadth $4-4\frac{1}{2}$ mill.

Auricula myosotis, *Pfr. in Wiegman Arch. f. Nat.* 1841, i. p. 224: not *Dráp.*

Alexia obsoleta, *Pfr. in Malak. Bl.* 1854, p. 111; *Syn. Auric.* n. 161; *Mon. Auric.* p. 151.

H. and A. Adams, Gen. rec. Moll. ii. p. 241.

Hab. Trieste, on walls of the haven.

11. ALEXIA BERMUDENSIS.

Shell imperforate, oblong-ovate, rather thin, faintly striated longitudinally, principally near the suture, not shining, blackish-brown or horn-coloured; spire convexly conic, with the apex blackish, rather pointed; suture distinctly bordered; whorls seven to eight, moderately convex, the last as long as, or a little shorter than, the spire, scarcely attenuated at base; aperture

nearly perpendicular, semiovate, rounded in front; parietal plait single, middle-sized, compressed; columellar plait callous, nearly perpendicular, slightly twisted; peristome bordered with white, slightly expanded, with the margins united by a shining deposit. Length 8, breadth $3\frac{1}{3}$ mill.

Alexia Bermudensis, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 33. n. 8; *Gen. rec. Moll.* ii. p. 241.

Pfr. Syn. Auric. n. 162; *Mon. Auric.* p. 152.

Hab. Bermuda.

12. ALEXIA KUTSCHIGIANA.

Shell small, ovate-conoidal, striated transversely, silk-shining, horn-coloured reddish-brown; whorls seven; spire elongated, broadly conic, acute; aperture white; peristome slightly lipped, reflexed; columellar margin three-plaited; right margin furnished with a single tooth. Length $4\frac{1}{2}$, breadth $2\frac{1}{2}$ lines (*Küst.*).

Auricula Kutschigiana, *Küst. Auric.* p. 55. t. 8. f. 11-14.

Alexia Kutschigiana, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 33. n. 6; *Gen. rec. Moll.* ii. p. 241.

Pfr. Syn. Auric. n. 163; *Mon. Auric.* p. 152.

Hab. Near Trieste, near Spalato, and on the island of Tissa (*Küst.*).

11. LEUCONIA, Gray.

Shell imperforate, ovate-oblong, thin, rather smooth; spire conic; aperture elongately ovate; parietal plait single, rarely double; columellar plait distinct, oblique; peristome rather simple, without teeth. Animals living in places which are often submerged with salt-water, but breathing by lungs.

Leuconia, *Gray*, 1840, in *Turt. Man.* ed. nov. p. 227 (section of *Conorulus*); 1842, *Syn. Brit. Mus.* p. 91, and 1847, *Proc. Zool. Soc.* p. 179.

H. and A. Adams in Proc. Zool. Soc. 1854, p. 36; *Gen. rec. Moll.* ii. p. 247.

Pfr. in Malak. Bl. 1854, p. 152; *Mon. Auric.* p. 154.

Volutæ, *Auriculæ*, *Conovuli*, *Volvarisæ*, *Jaminisæ*, sp., *Auctt.*

This genus might, from the mode of life of the animals, be ascribed to the subfamily *Melampinæ*, but on account of the difficulty of distinguishing it from *Alexia*, the few known species may be described here.

1. LEUCONIA BIDENTATA.

B.M.

Shell imperforate, ventricosely fusiform, rather solid, almost smooth, shining, whitish; spire conic, pointed; suture linear; whorls six, flat, the last forming three-fifths of the total length, inflated, attenuated at base; aperture oblique, narrowly semi-ovate, furnished with two plaits; parietal plait rather transverse; columellar plait smaller, somewhat twisted; peristome slightly thickened, almost imperceptibly reflexed. Length $6\frac{1}{2}$, breadth $3\frac{1}{2}$ mill.

Voluta bidentata, Montagu, *Test. Brit. Suppl.* p. 100. pl. 30. f. 2.
Dillw. Descr. Cat. ii. p. 507.

Jaminea bidentata, Leach, *Catal. ined.*

Brown, Ill. Conch. Gr. Br. p. 22. pl. 8. f. 7.

Auricula bidentata, Férussac, *Prodr.* p. 103. n. 9.

Gray, Ann. of Philos. xv.

Jeffr. in Linn. Trans. xvi. p. 368.

Conovulus (Leuconia) bidentatus, Gray in *Turt. Man.* ed. nov. p. 227. pl. 12. f. 145.

Clark in Ann. & Mag. N. H. 2 ser. vi. p. 445.

Forbes and Hanl. Brit. Moll. iv. p. 191. pl. 125. f. 1, 2.

Conovulus bidens, Gray in *Turt. Man. Ind.* t. 12.

Acteon bidentatus, Flem. *Brit. Anim.* p. 337.

Leuconia bidentata, Gray in *Proc. Zool. Soc.* 1847, p. 179.

Pfr. Syn. Auric. n. 165; *Mon. Auric.* p. 154.

H. and A. Adams, Gen. rec. Moll. ii. p. 248.

β. With the spire eroded.

Auricula erosa, Jeffr. in *Linn. Trans.* xvi. p. 369.

γ. Slender, with the spire more produced, aperture narrower, columellar plait often nearly obsolete.

B.M.

Voluta, Boys and Walker, *Test. rar.* p. 17. pl. 3. f. 61 ?

Voluta alba, Mont. *Test. Brit.* p. 235 ?

Dillw. Descr. Cat. i. p. 508. n. 22.

Turt. Conch. Dict. p. 250.

Auricula alba, Férussac, *Prodr.* p. 103. n. 10.

Gray, Ann. of Philos. xv.

Jeffr. in Linn. Trans. xvi. p. 368.

Forbes, Malac. Mon. p. 12.

Volvaria alba, Flem. *Brit. Anim.*

Conovulus (Leuconia) albus, Gray in *Turt. Man.* new edit. p. 227. pl. 12. f. 146.

Conovulus bidentatus, var., Forbes & Hanl. *Brit. Moll.* iv. p. 192.

Leuconia alba, H. and A. Adams in *Proc. Zool. Soc.* 1854, p. 36. n. 1; *Gen. rec. Moll.* ii. p. 248. pl. 83. f. 3.

Pfr. Syn. Auric. n. 166.

Hab. Coasts of Great Britain.

2. LEUCONIA MICHELI.

Shell imperforate, ovate-conic, thin, faintly striated, diaphanous, slightly shining, whitish-yellow; spire conic, rather pointed; suture linear; whorls six and a half to seven, scarcely convex, the last forming about four-sevenths of the total length, rather attenuated at base; aperture scarcely oblique, semiovate, rounded in front, furnished with two plaits; parietal plait middle-sized, somewhat transverse; columellar plait callous, slightly twisted; peristome rather simple, straight; right margin slightly sinuate above, columellar margin adnate. Length $5\frac{1}{2}$, greatest breadth 3 mill.

Auricula Micheli, *Mittre in Revue Zool.* 1841, p. 66.

Leuconia Micheli, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 36. n. 4; *Gen. rec. Moll.* ii. p. 248.

Pfr. Syn. Auric. n. 167; *Mon. Auric.* p. 156.

Hab. Coasts of Mediterranean Sea, near Toulon.

3. LEUCONIA BIVONÆ.

Shell imperforate, ovately fusiform, extremely thin, smooth, pellucid, glassy; spire conic, rather pointed; suture simple, impressed; whorls seven, moderately convex, the last scarcely longer than the spire, much attenuated at base; aperture nearly perpendicular, narrow, semielliptical, furnished with two plaits; parietal plait middle-sized, compressed; columellar plait oblique, twisted, not reaching the base of aperture; peristome simple, straight, with the columellar margin not dilated. Length 5, greatest breadth $2\frac{1}{2}$ mill.

Ovatella bidentata, *Bivona, Nuor. Gen.* p. 22. t. 2. f. 10: not *Montagu*.

Auricula myosotis, β , *Philippi, Sicil.* i. p. 143.

Auricula Bivonæ, *Philippi, Sicil.* ii. p. 118.

Küst. Auric. p. 20. t. 2. f. 14, 15.

Leuconia Bivonæ, *H. and A. Adams in Proc. Zool. Soc.* 1854, p. 36. n. 5; *Gen. rec. Moll.* ii. p. 248.

Pfr. Syn. Auric. n. 168; *Mon. Auric.* p. 156.

Hab. Sicily.

4. LEUCONIA OCCIDENTALIS.

Shell oblong, extremely thin, smooth, diaphanous, pale horn-coloured or whitish; spire regularly conoidal, rather pointed; whorls five to six, scarcely convex, the last forming about five-sevenths of the total length, somewhat turgid above, slightly attenuated at base; aperture nearly perpendicular, narrowly semiovate; parietal plait single, middle-sized below the middle;

columellar plait oblique, rather twisted; peristome simple; right margin dilated forwards in the middle; columellar margin extremely short. Length 3, breadth $1\frac{1}{2}$ mill.

Leuconia occidentalis, *Pfr. in Malak. Bl.* 1854, p. 155; *Syn. Auric.* n. 169; *Mon. Auric.* p. 157.

H. and A. Adams, Gen. rec. Moll. ii. p. 248.

Hab. Sea-coast near Cardenas, Isle of Cuba (*Gundlach*).

5. LEUCONIA? SAYI.

Shell minute, conic-ovate, shining, horn-coloured, striated; spire pointed, broadly conic; whorls six, moderately convex; aperture oblong; columella furnished with two plaits. Length $2\frac{1}{2}$, breadth $1\frac{1}{2}$ lines (*Küst.*).

Auricula Sayi, *Küster, Auric.* p. 42. t. 6. f. 14, 15.

Leuconia Sayi, *H. and A. Adams in Proc. Z. S.* 1854, p. 36. n. 2; *Gen. rec. Moll.* ii. p. 248.

Pfr. Syn. Auric. n. 170; *Mon. Auric.* p. 157.

Hab. United States of America.

6. LEUCONIA SUCCINEA.

Shell imperforate, fusiformly ovate, thin, smooth, diaphanous, shining, amber-coloured; spire conic, rather pointed; suture indistinctly bordered; whorls five, rather flattened, the last descending anteriorly, scarcely longer than the spire, attenuated at base; aperture oblique, narrowly semiovate, furnished with three plaits; upper plait parietal, lamelliform, entering horizontally; second plait smaller, oblique, dentiform like the columellar plait, with which it is arcuately united; peristome simple, straight, with the right margin arched slightly and regularly. Length $4\frac{1}{2}$, breadth 2 mill.

Leuconia succinea, *Pfr. in Malak. Bl.* 1854, p. 156; *Syn. Auric.* n. 171; *Mon. Auric.* p. 157.

H. and A. Adams, Gen. rec. Moll. ii. p. 248.

Hab. Near Cardenas, Cuba (*Gundlach*).

12. CARYCHIUM, O. F. Müller.

Shell pupiform, thin, glassy, with few whorls; aperture rather ovate; columellar plait single, tooth-shaped or obsolete; body of the penultimate whorl furnished with one or two teeth; peristome expanded, with distant margins; right margin bearing sometimes a single tooth within.

Carychium, *O. F. Müller, 1774, Hist. Verm.* ii. p. 125; 1776, *Zool. Dan. Prodr.* p. xxix.

- Carychium*, *Blainv.* 1817, *Dict. Sc. Nat.* vii. p. 187, et 1825; *Malac.* p. 453.
Studer, 1820, *Verzeichn.* p. 21.
Férussac, 1821, *Prodr.* p. 100, et *Tabl. Syst.* p. xxxiii.
Gray, 1821, in *Lond. Med. Repos.*; 1840, in *Turt. Man.* p. 221; 1842, *Syn. Brit. Mus.* p. 91; 1847, in *Proc. Z. S.* p. 179.
C. Pfeiffer, 1821, *Naturgesch.* i. p. 13. 69; iii. p. 5.
Latreille, 1825, *Fam. Natur.* ed. *Berth.* p. 176.
Fleming, 1828, *Brit. Anim.* p. 270.
Menke, 1828, *Synops.* p. 19, ed. 2. p. 35.
Rang, 1829, *Manuel*, p. 172.
Michaud, 1831, *Compl. à Draparnaud*, p. 72 (including *Alexia*).
Fitzinger, 1833, *Verzeichn.* p. 110.
Rossmässler, 1837, *Icon.* vi. p. 54; et 1839, x. p. 36.
Beck, 1837, *Ind.* p. 103.
Anton, 1839, *Verzeichn.* p. 48.
D'Orbigny, 1841, *Moll. Cub.* i. p. 137. tab.
Cantraine, 1841, *Malac. Médit.* p. 169.
Küster, 1844, in *Chemn.* ed. nov. i. 16. p. 4.
Herrmannsen, 1846, *Ind. Gen. Malac.* i. p. 189.
Dupuy, 1850, *Moll. de France*, p. 425.
Philippi, 1853, *Handb. d. Conch.* p. 252.
L. Pfeiffer, 1853, *Zeitschr. f. Malak.* p. 9; et 1854, *Malak. Bl.* p. 192; 1856, *Mon. Auric.* p. 158. 197.
Forbes and Hanley, 1853, *Brit. Moll.* iv. p. 198.
H. and A. Adams, 1854, in *Proc. Z. S.* p. 33; et 1855, *Gen. rec. Moll.* ii. p. 242.
Carichium, *Férussac*, 1801.
Saraphia, *Risso*, 1826, pt.
Auricella, *Jurine*, *Hartmann*.
Helicis, *Bulimi*, *Turbinis*, *Auriculæ*, *Odostomiæ*, *Pupæ*, sp. *Auct.*

This genus was first founded by O. F. Müller upon observation of the animal; it was subsequently neglected by authors, or ascribed to the genus *Auricula*, and at last adopted by most authors as a genus or (by Blainville and Deshayes) as a subgenus of *Auricula*. Several, namely Studer, Férussac, Blainville, Michaud, and Rossmässler, place in this genus the *Turbo fuscus*, Mont., now referred to the operculated family. Dr. Leach circumscribed the genus *Carychium* in a different manner, comprising in it the species of Lamarck's *Auricule* with disunited margins of the peristome, among which he includes one species of *Bulimus*. Other authors likewise confounded several species

with the genus *Carychium*, which do not even belong to the same family.

The known species may be divided into the following sections:—

A. Columellar plait distinct.

a. Right margin toothed § 1. No. 1– 4

b. Right margin without teeth § 2. – 5– 6

B. Columellar plait obsolete § 3. – 7–12

§ 1. *Columellar plait distinct; right margin of the peristome toothed.*

1. *CARYCHIUM MINIMUM.*

B.M.

Shell subrimate, ovate-oblong, thin, faintly striate, yellowish-glassy; spire elongate, rather blunt; suture deep, somewhat marginate; whorls five to five and a half, convex, the last forming two-fifths of the total length, more ventricose; aperture oblique, ovate-oblong; body of the penultimate whorl furnished with a single compressed plait; columellar plait distinct, dentiform; peristome slightly lipped, with the margins rather convergent, united by a callus; right margin much curved above, bearing within a single callous tooth on its middle; columellar margin slightly spreading. Length 2, breadth nearly 1 mill.

Carychium minimum, Müll. *Hist. Verm.* ii. p. 125. n. 321.

Leach, Zool. Misc. i. p. 84.

Férussac, Prodr. p. 100. n. 2.

C. Pfeiffer, Naturgesch. i. p. 69. t. 1. f. 5, 6. (anim.) t. 3. f. 40, 41.

Michaud, Compl. à Draparnaud, p. 74.

Jeffreys in Linn. Trans. xvi. p. 365.

Cristof. and Jan, Catal. p. 6.

Beck, Ind. p. 103. n. 1.

Potiez et Mich. Gal. Douai, i. p. 200.

Rossm. Icon. x. p. 36. t. 49. f. 660.

Gray in Turt. Man. ed. nov. p. 221. pl. 7. f. 77. (p. 219. f. 1, 2. anim.).

Sow. jun. Conch. Man. p. 99. f. 301.

Küst. Auric. p. 4. t. 1. f. 8–10.

F. Schmidt, Krain Conch. p. 15.

Parr. Oesterr. Conch. p. 4.

Joba, Coq. Départ. Moselle, p. 10.

Graëlls, Catal. Moll. Espana, p. 10.

Strobel, Malac. Ungher. p. 32.

Dupuy, Moll. France, p. 427. pl. 21. f. 1.

De Betta, Malac. Valle di Non, p. 130.

- Carychium minimum*, *Zeilebor, Oesterr. Conch.* p. 16.
Forbes and Hanley, Brit. Moll. iv. p. 198. pl. 125. f. 6.
Frauenfeld in Verhandl. Zool. Bot. Vereins. Wien, iv. p. 9.
 t. 1. f. 2.
Gallanstein in Jahrb. Landesmus. Kärnt. p. 81.
Woodward, Man. Moll. pl. 12. f. 39.
H. and A. Adams in Proc. Z. S. 1854, p. 33. n. 1.
Pfr. Syn. Auric. n. 172.
De Betta e Martinati, Moll. Venete, p. 72.
Drouët, Moll. France, p. 24. n. 207.
- Carychium minimum*, *H. and A. Adams, Gen. rec. Moll.* ii. p. 242.
 pl. 82. f. 6, 6a.
Pfr. Mon. Auric. p. 160.
- Helix Carychium*, *Gmel. Syst.* p. 3665. n. 156.
V. Alten, Augsb. p. 107. t. 13. f. 23.
- Bulimus minimus*, *Brug. in Encycl. Méth.* i. p. 310. n. 21? (*Helix minuta*, *Müll.*).
- Turbo Carychium*, *Mont. Test. Brit.* p. 339. pl. 22. f. 2.
Mat. and Rack. in Linn. Trans. viii. p. 184.
Pult. Catal. Dors. p. 52. pl. 19. f. 13.
Dilh. Descr. Catal. ii. p. 880. n. 155.
- Auricula minima*, *Drap. Tabl. Moll.* p. 54. n. 2; *Hist.* p. 57. pl. 3.
 f. 18, 19.
Lamarck, Hist. vi. 2. p. 140. n. 10; ed. *Desh.* viii. p. 330 :
Desh. in Encycl. Méth. ii. p. 93. n. 18.
- Odostomia Carychium*, *Fleming in Edinb. Encycl.* vii. p. 76.
- Auricella Carychium*, *Jurine, Hartm. in Neue Alpina*, i. p. 49.
- Saraphia tridentata*, *Risso, Hist.* iv. p. 84 (*Mortillet*).

β. Shell shortened, more ventricose towards the base.

Carychium minimum v. *ventricosum*, *Beck, Ind.* p. 103.

Auricella inflata, *Hartm. in Sched.*

γ. Minute.

Carychium minutissimum, *Fér. MSS. (Beck.)*

Hab. Sweden, Britain, Germany, France, Spain, Italy, &c.

2. CARYCHIUM ELONGATUM.

Shell subrimate, oblong, rather fusiform, smooth, glassy; spire elongate, with the apex somewhat blunt; suture deep, simple; whorls six, convex, the last narrower, forming one-third of the total length; aperture oblique, acuminate ovate; parietal plait single; columellar plait tooth-shaped; peristome slightly lipped, expanded; right margin furnished within with an indistinct tooth. Length 2, breadth $\frac{2}{3}$ mill.

Carychium minimum, var. ?, *Pfr. in Wiegman. Arch. f. Nat.* 1841, i. p. 224.

Carychium elongatum, *A. and J. B. Villa, Disp. Syst.* p. 59.

Pfr. Syn. Auric. n. 173.

H. and A. Adams, Gen. rec. Moll. ii. p. 242.

Pfr. Mon. Auric. p. 162.

Carychium nanum, *Anton, Verz.* p. 48. n. 1760 ?

Küst. Auric. p. 5. t. 1. f. 10 ?

Carychium minimum mut. elongatum, *Ströbel, Malac. Trent.* p. 20.

Tassinari in Giorn. Malac. 1854, p. 70.

Hab. North of Italy and littoral province of Austria (near Caporeto).

3. CARYCHIUM GRACILE.

Shell very minute, fusiform, striate, whitish; aperture two-toothed; peristome dilated, reflexed, furnished with a white lip; whorls six. Length 2 mill. (*Mor.*)

Auricula gracilis, *Morelet, Moll. du Portugal*, p. 76. pl. 7. f. 3.

Carychium gracile, *Pfr. Mon. Auric.* p. 163.

Hab. Near Coïmbra, Portugal.

4. CARYCHIUM INDICUM.

B.M.

Shell scarcely rimate, oblong, nearly cylindrical, thin, smooth, glassy; spire elongate, slightly attenuated towards the apex, which is rather blunt; whorls five, increasing slowly, the upper ones moderately convex, the last two flatter, the last one forming scarcely one-third of the total length; aperture rather oblique, ovate; body of the penultimate whorl bearing a single tooth; columellar plait middle-sized, oblique; peristome thickened; right margin furnished within with a dentiform callus; columellar margin rather adnate. Length nearly 2, breadth $\frac{2}{3}$ mill.

Carychium Indicum, *Benson in Ann. and Mag. N. H.* ser. 2. iv. p. 194.

H. and A. Adams, in Proc. Z. S. 1854, p. 34. n. 5; *Gen. rec. Moll.* ii. p. 242.

Pfr. Syn. Auric. n. 174; *Mon. Auric.* p. 163.

Carychium bidens, *Hutton, MSS.*

Hab. Simla and Landour, sub-Himalayan Mountains.

§ 2. *Columellar plait distinct; right margin toothless.*

5. CARYCHIUM LAUTUM.

Shell subrimate, ovate-conic, thin, glassy, smooth; spire

conic, blunt; whorls five to six, moderately convex, the last longer than the spire, turgid near the suture; aperture lunate, somewhat dilated anteriorly; body of the penultimate whorl furnished with two small teeth, the one stronger near the columella, the other on the middle part; columellar plait tooth-shaped; peristome expanded, slightly reflexed; right margin sinuate in its middle part, not thickened. Length 1·7, breadth 1·35 mill.

Carychium lautum, *Frauenfeld in Verhandl. Zool. Bot. Ver. Wien* iv. p. 11. t. 1. f. 4.

Pfr. Syn. Auric. n. 175; *Mon. Auric.* p. 163. 198.

H. and A. Adams, Gen. rec. Moll. v. p. 242.

Carychium lautum, *Frauenf. in Sitzungsber. Akad. d. Wiss.* 1856, p. 22. f. 2.

Hab. In the cavern of the mountain of Kimberg, Carniolia (*T. Schmidt*).

6. CARYCHIUM SPELÆUM.

Shell rimate, rather umbilicate, ovate-conic, nearly smooth, whitish-glassy; spire conic, blunt; whorls six, convex, the last shorter than the spire; aperture rather oblique, lunate; body of the penultimate whorl furnished with two teeth, the upper of which is very small; columellar plait slight; peristome indistinctly lipped, narrowly expanded; columellar margin dilated, spreading. Length $1\frac{1}{2}$, breadth 1 mill.

Carychium spelæum, *Rossm. Icon.* x. p. 36. t. 49. f. 661.

Küst. Auric. p. 6. t. 1. f. 11, 12.

Frauenf. in Verh. Zool. Bot. Ver. Wien, iv. p. 10. t. 1. f. 3.

H. and A. Adams in Proc. Z. S. 1854, p. 34. n. 3; *Gen. rec. Moll.* ii. p. 242.

Pfr. Syn. Auric. n. 176; *Mon. Auric.* p. 164.

Frauenf. Sitz. 1856, p. 14.

Auricula spelæa, *A. Schmidt in Zeitschr. f. Malak.* 1853, p. 47.

Hab. In the cavern of Adelsberg, Carniolia.

§ 3. Columellar plait indistinct.

7. CARYCHIUM SCHMIDTI.

Shell subrimate, ovate-conic, thin, very finely and regularly ribbed, glassy; spire conic, with the apex blunt; suture deep; whorls five to six, very convex, increasing slowly, the last shorter than the spire; aperture obliquely lunate, slightly dilated at base; body of the penultimate whorl bearing two distant equal minute teeth; columellar plait obsolete; peristome

dilated and expanded on all sides; right margin rather impressed. Length 2, breadth 1·5 mill.

Carychium Carniolicum, *F. Schmidt, MSS.*

Carychium Schmidtii, *Frauenfeld in Verh. Zool. Bot. Ver. Wien*, iv. p. 12. t. 1. f. 5.

Pfr. Syn. Auric. n. 177; *Mon. Auric.* p. 164. 198.

H. and A. Adams, Gen. rec. Moll. ii. p. 242.

Frauenf. Sitz. 1856, p. 18. f. 4.

β. *Carychium pulchellum*, *Freyer, Sitz.* 1855, p. 20. f. 4.

γ. *Carychium costatum*, *Freyer, ib.* p. 20. f. 5.

δ. *Carychium obesum*?, *Freyer, ib.* p. 21. f. 6.

ε. *Carychium lautum*?, *Freyer, ib.* p. 21. f. 7.

ζ. *Carychium Freyeri*, *Freyer, Sitz.* 1855, p. 18. f. 1.

Pupa *Freyeri*, *F. Schmidt, Pfr. Mon. Helic.* iii. p. 533. n. 33.

(Imperfect form.)

Hab. In several caverns of Carniolia.

8. CARYCHIUM OBESUM.

Shell rimate, globose-conic, thin, smooth, rather diaphanous, whitish; spire rather convexly conic, somewhat pointed; suture middling; whorls five to six, moderately convex, the last shorter than the spire; aperture oblique, roundish lunate; body of the penultimate whorl bearing a single compressed tooth; columellar plait indistinct; peristome expanded, slightly reflexed; right margin arched, columellar margin nearly perpendicular. Length 2, breadth 1·6 mill.

Carychium obesum, *F. Schmidt, MSS.*

Frauenf. in Verhandl. Zool. Bot. Ver. Wien, iv. p. 12. t. 1. f. 6; *Sitz.* 1856, p. 22. f. 3.

Pfr. Syn. Auric. n. 178; *Mon. Auric.* p. 165, 198.

H. and A. Adams, Gen. rec. Moll. ii. p. 242.

Hab. Cavern near Obergurk, Carniolia (*F. Schmidt*).

9. CARYCHIUM EXIGUUM.

B.M.

Shell scarcely rimate, ovate-turrit, faintly striate, glassy; spire elongate, rather pointed; whorls five, moderately convex, the last forming a little more than one-third of the total length, rounded at base; aperture scarcely oblique, acuminate ovate; body of the penultimate whorl bearing a single compressed tooth near the columella; columellar plait indistinct; peristome simple, expanded; right margin rather dilated. Length $1\frac{3}{4}$, breadth $\frac{3}{4}$ mill.

Pupa *exigua*, *Say in Philad. Journ.* ii. p. 375.

Pupa exigua, *Gould in Bost. Journ.* iii. p. 398. pl. 3. f. 20; *Rep. Massach.* p. 191. f. 120.

Carychium exiguum, *Pfr. in Wiegmann. Arch. f. Nat.* 1841, i. p. 224.

Küst. Auric. p. 61. t. 1. f. 13, 14.

Gould in Binn. Terr. Moll. Un. St. ii. p. 288.

Jay, Catal. 1850, p. 263. n. 6122.

Stimpson, Shells of New England, p. 52.

Frauenfeld in Verh. Zool. Bot. Ver. Wien, iv. p. 10. t. 1. f. 1.

H. and A. Adams in Proc. Z. S. 1854, p. 33. n. 2; *Gen. rec.*

Moll. ii. p. 242.

Pfr. Syn. Auric. n. 179; *Mon. Auric.* p. 165.

Frauenf. Sitz. 1856, p. 12.

Bulimus exiguus, *Binney, Terr. Moll. U. S.* ii. p. 286. pl. 53. f. 1.

Hab. United States: Vermont, Pennsylvania, Ohio, Arkansas.

10. CARYCHIUM ALPESTRE.

Shell smooth, white, shortly conic, one-toothed; aperture pyriform, reflexed, slightly impressed on the external margin; labium rather circular, closely joined with the peristome on the middle of the whorl; first four volutions rather convex, the fifth ventricose, imperforate. Height $1\frac{1}{2}$, breadth 1 mill. (*Fr.*)

Carychium alpestre, *Freyer, Sitz. Akad. Wiss.* 1855, p. 19. f. 2.

Frauenf. Sitz. 1856, p. 21.

Pfr. Mon. Auric. p. 198.

Hab. Cavern Dioja Grica and others in Carniolia.

11. CARYCHIUM FRAUENFELDI.

Shell white, shortly conic, ribbed obliquely; whorls convex, gradate, the sixth ventricose, slightly umbilicated; first and second whorls smooth, the third narrower than the second; aperture broad, rounded at the outer side; peristome reflexed; labium circular; labrum slightly impressed, sharply lobate above, gradually flattened towards its insertion; parietal lamella strong, tooth-shaped, placed near the columella. Height 2, breadth $1\frac{1}{3}$ mill. (*Fr.*)

Carychium Frauenfeldi, *Freyer, Sitzungsber.* 1855, p. 19. f. 3.

Frauenf. Sitz. 1856, p. 16.

Pfr. Mon. Auric. p. 199.

Hab. Several caverns in Carniolia.

12. CARYCHIUM AMCENUM.

Similar to *C. alpestre*, but distinguished by its toothless longi-

tudinal mouth and rather cylindrical, pupoid shape ; whorls five, very convex, the first ones slowly increasing, the last very large ; mouth like that of *C. spelæum*, but with the outer margin more rounded, not impressed ; peristome broadly reflexed, not thickened ; umbilical groove deep, forming no prominence in the mouth ; columella forming an angle with the penultimate whorls ; shell extremely minute, smooth, white, shining. (*Frauenf.*)

Carychium amœnum, *Frauenf. Sitzungsber.* 1856, p. 15. f. 1.

Pfr. Mon. Auric. p. 199.

Hab. Cavern "Pasiza," Carniolia.

CATALOGUE

OF

TRUNCATELLIDÆ.

"Shell spiral; whorls gradually enlarging. Apex acute, deciduous. Aperture ovate. Peristome continuous. Muzzle broadly two-lobed. Jaws distinct. Tongue linear. Teeth —? Tentacles compressed, short, diverging. Eyes large, black, with a peculiar, very visible, prominent white pupil on the inner hinder part of the base of the tentacles. Foot very short, rounded. Operculigerous lobe simple. Operculum horny, ovate, of few whorls. Walks with its foot, its dilated lips forming an intermediate loop."—*Gray's Guide*, &c. p. 94.

"A pair of jaws and single branchial plume."—*Clark, Brit. Mar. Test.* 383.

Teeth of *T. Montagu* 3 · 1 · 3. The central rather narrow, with a recurved central lobe; inner lateral broad; inner upper edge with three broad denticles; central rather like inner, but narrower and more oblique; outer conical, compressed, curved; apex denticulated.

1. TRUNCATELLA.

Shell imperforate, turritid, always truncate when adult, rather cylindrical, smooth or ribbed. Aperture oval or elliptical. Peristome rather continuous, straight or slightly expanded, simple or duplicate. Operculum thin, horny, imperceptibly sub-spiral, with a basal nucleus.

Animal terrestrial, generally living on moist spots near the sea. Head snout-shaped, used for walking together with the short foot. Tentacles two, short, cylindrical, obtuse, bearing the eyes between the posterior and interior part of their bases.

Truncatula, *Leach, Catal. ined.* 1818.

Risso, 1826, *Eur. Mérid.* iv. p. 124.

Menke, 1830, *Syn.* ed. 2. p. 43.

Lowe, 1831, *Zool. Journ.* v. p. 299.

Truncatula, Cantraine, 1836, *Bull. Brux.* ii. p. 87.

Deshayes, 1838, in *Lam. Hist.* viii. p. 363.

Anton, 1839, *Verzeichn.* p. 62.

Swains. 1840, *Malac.* p. 343.

Gray, 1840, *Syn. Cont. Brit. Mus.* p. 61; ed. 1842, 90.

D'Orbigny, 1841, *Moll. Cub.* ii. p. 5; and 1843, *Paléont. Franç. Terr. Crét.*

Philippi, 1841, in *Wiegman. Arch.* i. p. 51. 341.

L. Pfeiffer, 1841, *Symb.* p. 4.

Reeve, 1841, *Proc. Z. S.* ix. p. 76; and 1842, *Conch. Syst.* ii. p. 93.

G. B. Sowerby, jun., 1842, *Conch. Man.* ed. 2. p. 280.

Thomps. 1844, *Report Faun. Irel.* p. 255.

Philippi, 1844, *Enum. Moll. Sicil.* ii. p. 133.

Thorpe, 1844, *Brit. Mar. Conch.* p. 146.

Catlow, 1845, *Conch. Nomencl.* p. 169.

L. Pfeiffer, 1846, in *Zeitschr. f. Malak.* p. 177; and 1847, *ib.* p. 112.

Gray, 1847, in *Proc. Z. S.* xv. p. 159.

Herrmannsen, 1849, *Ind. gen. Malac.* ii. p. 626.

Jay, 1850, *Catal.* ed. 4. p. 252.

J. E. Gray, 1850, in *M. E. Gray's Fig. Moll. Anim.* iv. p. 85.

C. B. Adams, 1851, *Contr. to Conch.* no. 9. p. 182; and 1852, *Ann. Lyc. N. York*, v. p. 436.

Dupuy, 1851, *Moll. France*, p. 531.

Woodward, 1851, *Man. Moll.* i. p. 137.

Forbes and Hanley, 1853, *Brit. Moll.* iv. p. 316.

Philippi, 1853, *Handb. d. Conch.* p. 263.

Lowe, 1854, in *Proc. Z. S.* xxii. p. 217.

Poey, 1854, *Memor. Hist. Nat. de Cuba*, i. p. 393.

Küster, 1855, *Die Gattungen Truncatella und Paludinella*, in *Chemn. Conch. Cab.* ed. nov. vol. i.

H. and A. Adams, 1856, *Gen. rec. Moll.* ii. p. 310.

Pfr. 1856, *Mon. Auric.* p. 175.

Fidelis, *Risso*, *Eur. Mérid.* iv. p. 121.

Choristoma, *De Crist. and Jan*, 1832, *Catal. Mantissa*, p. 3.

Hartmann, 1840, *Erd- u. Süssw. Gasterop.* i. *System Übers.*

Zeanoë, *Leach*, *Brit. Moll.* (MSS. 1818) 198, 1852.

Glaucothoë, *Leach*, *Brit. Moll.* (MSS. 1818) 299, 1852.

Erpetrometra, *Lowe*, MSS.

Helix, *Turbo*, *Cyclostoma*, *Acmea*, *Paludina*, *Pyramis*, *Rissoa*, *Turritella*, sp., *Auctt.*

The first who proposed a new genus of *Turbonidæ* for *Cyclostoma truncatulum*, *Drap.*, was *Leach* in his inedited Catalogue, 1818; he named the genus *Truncatula*, and it was adopted by

Risso (1826) in the family of *Ellipsostoma*; but he changed the name into that of *Truncatella*, which must be retained, because Leach's name was not printed.

Menke was the first who adopted the genus under Risso's name; he referred it to the family of *Turbinæ*, and added to it several species belonging to other genera.

Lowe (1831) confirmed the genus which he had in his manuscripts called *Erpetrometra*, by observation of the animal, and described it more accurately among the genera of *Paludinaidæ*. To the same family it was referred (1841 and 1843) by D'Orbigny.

De Cristofori and Jan (1832) founded on the type of Draparnaud the genus *Choristoma*, synonymous with *Truncatella*.

In the year 1836 the genus *Truncatella* was adopted by Cautrain, and (1838) by Deshayes, who declared it nearest allied to *Rissoa* by the shell and operculum, and intermediate between *Rissoa* and *Pedipes* by the character of the animal.

Anton (1839) regarded *Truncatella* as a subgenus of *Melania*, and Swainson (1840) of *Turritella*.

Dr. Gray acknowledged the genus in his works (1840, 1842, 1847 and 1850), and proposed for it the family of *Truncatellidæ*, belonging to the *Pectinibranchiata phytophaga iniophthalma*. This family is adopted by Lowe (1854), but ascribed to the amphibious *Pulmonata Gasteropoda*, and by H. and A. Adams (1856), in whose work it is the only family of the suborder of *Opisophthalma*, and contains the genera *Truncatella*, *Geomelania*, *Acicula* and *Tomichia*.

Philippi (1841) adopted the genus *Truncatella*, the species of which he had before ascribed to *Rissoa*. In 1844 he referred it to the family of *Peristomacea*!

In 1841 Dr. L. Pfeiffer and Reeve quoted the genus among the family of *Cyclostomacea*, and likewise Miss A. Catlow, 1845; Jay, 1850; Dupuy, 1851; Philippi, 1853, and Poey, 1854. C. B. Adams (1851 and 1852) preferred the name of *Cyclostomidæ*.

To the family of *Colimacea* the genus was referred by G. B. Sowerby (1842) and Thorpe (1844); to *Turbinidæ* by Thompson (1844); to *Littorinidæ*? (1851) by Woodward; and to *Pyramidellidæ* by Forbes and Hanley (1853).

Finally, Küster, who published in 1855 a monograph of the genus, with the figures of ten species, did not indicate its systematic place.

The remaining authors, who have mentioned Mollusca belonging to this genus, ascribed them to various genera: Pulteney to *Helix*; Montagu to *Helix* and *Turbo*; Draparnaud, Lamarck, Fleming, Scacchi, Michaud and Rossmässler to *Cyclostoma*; Hartmann to *Acmea*; Payraudeau to *Paludina*; Brown

to *Pyramis*; Philippi and Michaud to *Rissoa*; Fleming to *Turritella*.

The following species must be excluded from the genus:—

Truncatella obesa, *Menke* = *Chondropoma*.

—— *solida*, *Menke* = *Cyclostomus*?

—— *terebralis*, *Menke* (*Turbo striatulus*, *Linn.*) = ...?

—— *littorina*, *Phil.*

—— *atomus*, *Phil.* } = *Paludinella*.

—— *fusca*, *Phil.*

—— *ventricosa*, *Sow.* = *Tomichia*, *Bens.*

—— *lineata*, *Held.*

—— *lubrica*, *Held.* } = *Acicula*.

—— *spectabilis*, *Held.*

—— (??) *dubiosa*, *C. B. Adams* = *Paludinella*?

—— *Quoyi*, *Pfr.* (*Cyclostoma striatum*, *Quoy and Gaim.*) = *Acicula*?

Draparnaud was the first who described the animal of his *Cyclostoma truncatulum*; he said it was found on the ground under plants, often buried in sand; but in a note he proposes the question, if it might not be rather considered as a marine mollusk. Risso and Menke only regarded the characters of the shell when they assigned to the genus its systematic place. Lowe observed the form and habits of the animal, and was induced to declare it a marine and pectinibranchiate mollusk, although he noticed that it lived several weeks without water. Michaud declares it to be terrestrial, living in moist spots on sea-plants, but never submersed in water. Several authors followed Lowe, others adopted the opinion of Michaud. Dr. L. Pfeiffer collected living *Truncatellæ* in places distant from the sea, near Trieste and at Cuba, and recently the observations of Poey and Gundlach have confirmed the terrestrial habits of these animals; he therefore considers that the genus must be excluded from the Pectinibranchiata, and ascribed to the order *Phaneropneumona*. There has been a doubt whether the eyes are placed on the outer or inner side of the base of the tentacles. Draparnaud says that the eyes are situated "above the posterior base;" De Cristofori and Jan, "on the posterior base;" Lowe, "a little above the outer angle of the base;" Cantraine, "on the inner base;" Philippi, "on the superior base." These discrepancies of opinion have their origin in the extreme difficulty of observing the organs of these minute animals; but by the most recent and accurate observations it seems to be proved that the eyes are placed similarly to those of the genera *Acicula* and *Geo-*

melania, and that the true place of the genus *Truncatella* is among the *Phaneropneumona Opisophthalma*, or the family *Aicculidæ* (*Truncatellidæ*).

This genus is well defined by the formation of the shell, if we exclude those species ascribed to it by Philippi and C. B. Adams, which have not the shell turritid and truncate, and the peristome of which is disjoined and sharp. The shells of every true *Truncatella* are turritid and pointed when young, and show a larger number of whorls than the adult ones, which are truncated and have the apex covered with shelly substance. The operculum is described by some authors as spiral, by others as plain and not spiral; but the truth is, that there will be found a basal nucleus with the indication of a spiral volution.

The whole of the species have a very similar appearance, and the distinction of them is rather difficult, because many species are extremely variable in sculpture, showing every gradation from a smooth to a distinctly ribbed shell. But the shape of the mouth and the formation of the peristome, the convexity of the whorls, together with the basal crest, which is well developed in some species and entirely wanting in others, are the principal characters upon which the distinction of the species ought to be founded.

1. TRUNCATELLA VALIDA.

B.M.

Shell rimate, rather cylindrical, regularly and slightly attenuated towards the truncate apex, solid, whitish, pale yellow or reddish, sculptured with close-set, elevated, rectilinear, obtuse ribs, which are as broad as the interjacent spaces; remaining whorls five, moderately convex, the last furnished at its base with an arcuate compressed keel; aperture perpendicular, rather obliquely ovate, angular above; peristome double, thickened, slightly auriculated at its upper angle, with the columellar margin very slightly arcuate. Length $9\frac{1}{2}$, breadth 3 mill.

Truncatella valida, Pfr. in *Zeitschr. f. Malac.* 1846, p. 182. n. 1;
Mon. Auric. p. 184.

Jay, *Catal.* 1850, p. 253. n. 5779.

Küster, *Mon.* p. 11. n. 7. t. 2. f. 7, 8, 19–21, 23.

H. and A. Adams, *Gen. rec. Moll.* ii. p. 311.

Hab. Philippine Islands, Bacloyon, Capul (*H. Cuming*); New Caledonia and Malacca (*Dr. Traill*).

The young shell is turritid, pointed, with nine rather convex whorls; last whorl keeled, and smooth below the keel. Length $7\frac{1}{2}$ mill.

2. TRUNCATELLA CONSPICUA.

B.M.

Shell subrimate, cylindrical, slightly attenuated, solid, rather shining, reddish-yellow, sculptured with obtuse ribs, which are nearly rectilinear and as broad as the space between them; suture bordered and crenulate; remaining whorls four and a half, slightly convex, the last very shortly deflected, surrounded at its base with a compressed crest; aperture perpendicular, angularly oval; peristome continuous, slightly expanded; columellar margin rather appressed. Length $7\frac{1}{2}$, breadth $2\frac{1}{2}$ mill.

Truncatella conspicua, *Bronn, Catal. v. vi. vii.*

Pfr. Mon. Auric. p. 184.

Truncatella Vitiana, *Gould, teste Bronn.*

H. and A. Adams, Gen. rec. Moll. ii. p. 311.

β. Purplish (adult specimens sometimes not truncated; whorls ten. Length 11 mill.).

γ. With the whorls a little more convex.

Hab. Feejee Islands (*Bronn, Macgillivray*); Baclayon, Philippine Islands (*H. Cuming*); var. β. Isle of Pines, Australian Sea; var. γ. Korean Archipelago.

3. TRUNCATELLA GUERINI.

Shell scarcely rimate, nearly cylindrical, solid, pale fuscous or yellowish, sculptured with rather crowded longitudinal ribs, which are about as broad as the interjacent spaces; suture slight, crenulated by the elongated ribs; remaining whorls four, almost flat, the last compressed at its base into a short, arcuated crest; aperture perpendicular, ovate, slightly angulated above; peristome continuous, slightly expanded. Length 6– $7\frac{1}{2}$, breadth 2– $2\frac{1}{2}$ mill.

Truncatella Guerini, *A. et J. B. Villa, Disp. Syst. p. 59.*

Pfr. in Z. f. M. 1846, p. 183. n. 3; Mon. Auric. p. 184.

Küst. Mon. p. 15. n. 11.

H. and A. Adams, Gen. rec. Moll. ii. p. 311.

Hab. Isle of Mauritius.

4. TRUNCATELLA CARIBÆENSIS.

B.M.

Shell subrimate, nearly cylindrical, slightly attenuated, moderately solid, reddish, amber-coloured or yellow, finely ribbed; ribs rather rectilinear, often obsolete below the middle of the whorls; suture slight; remaining whorls three to four, increasing gradually, somewhat convex, the last in many specimens smooth, marked with a short basal crest; aperture nearly per-

pendicular, ovate elliptical, angulated above; peristome continuous, straight, thickened on the side of the penultimate whorl and in the angle of insertion. Length 7-8, breadth 3 mill.

Truncatella Caribæensis, *Sow. in Reeve, Conch. Syst.* ii. pl. 182. f. 7.

Pfr. in Z. f. M. 1846, p. 182. n. 2; *Mon. Auric.* p. 185.

Jay, Catal. 1850, p. 252. n. 5766.

Küst. Mon. p. 9. n. 5. t. 1. f. 35-37, t. 2. f. 22.

Poey, Memor. i. p. 393.

H. and A. Adams, Gen. rec. Moll. ii. p. 311.

Truncatella variabilis, *olim in litt.*

Truncatella Gouldii, *C. B. Adams, olim in Sched.*

Bronn, Catal. iv. 1847.

Truncatella Guerinii, *Parr. in Sched.*

Truncatella succinea, *C. B. Adams in Proc. Bost. Soc.* 1845, p. 12.

Hab. Cuba and Jamaica.

5. TRUNCATELLA MARGINATA.

B.M.?

Shell subrimate, cylindrical, slightly attenuated towards the truncate apex, rather thin, shining, amber-coloured or yellowish; suture bordered, furnished with papilliform folds; remaining whorls four to four and a half, moderately convex, the last slightly folded at its base, and marked with a very short or obsolete crest; aperture perpendicular, angularly ovate, somewhat effused in front; peristome continuous, thin, slightly expanded. Length $6\frac{1}{2}$, breadth $2\frac{1}{3}$ mill.

Truncatella marginata, *Küster, Monogr.* p. 12. n. 8. t. 2. f. 24-26.

Pfr. Mon. Auric. p. 186.

Hab. Labuan, Borneo, and Malacca: a smaller variety near Pondicherry.

6. TRUNCATELLA CEYLANICA.

Shell subrimate, cylindrical, slightly attenuated, faintly striated, shining, horny, reddish-brown or yellowish; remaining whorls four, folded and crenulated along the suture, the upper two rounded, the other flatter, the last not compressed in front; aperture perpendicular, large, angularly subovate; peristome continuous; right margin thin, slightly expanded; columellar margin slightly arcuate, appressed. Length 6, breadth 2 mill.

Truncatella Ceylanica, *Pfr. in Proc. Zool. Soc.* 1856; *Mon. Auric.* p. 186.

Hab. Ceylon.

7. TRUNCATELLA SUBCYLINDRICA.

B.M.

Shell scarcely rimate, cylindrical, shining, pellucid, horn-yellow or glassy, sculptured with crowded and regular minute ribs, which are sometimes only conspicuous near the suture, sometimes quite obsolete; remaining whorls four, moderately convex, flattened in the middle, increasing regularly, the last not keeled in front; aperture perpendicular, large, angularly ovate, slightly effused at base; peristome somewhat thickened, with the outer margin rather produced; columellar margin narrowly reflected, adnate and thickened above. Length 5, breadth 2 mill.

Helix subcylindrica, *Pulteney, Cat. Dorsetsh.* p. 49.

Mont. Test. Brit. ii. p. 393.

Truncatella truncatula, *Lowé in Zool. Journ.* v. p. 299. pl. 13. f. 13-18?; *in Proc. Z. S.* 1854, p. 217.

Truncatella subcylindrica, *Gray in Turt. Man.* ed. nov. p. 22. f. 6. *Shuttlew. Diagn. n. Moll.* no. 7. p. 154.

Pfr. Mon. Auric. p. 186.

Truncatella Caribæensis (part.), *Pfr. in Zeitschr. f. Mal.* 1846, p. 182.

Küst. Mon. t. 2. f. 1-4.

Hab. Cuba, Portorico, St. Thomas, Bermuda, &c.; Madeira?

8. TRUNCATELLA BAIRDIANA.

Shell subrimate, cylindrical, rather thin, pellucid, horny amber-coloured, sculptured with rather crowded, obtuse, longitudinal ribs; suture deep, strongly crenate; remaining whorls four, moderately convex, the last nearly smooth, crenated and imperceptibly compressed in front; aperture nearly perpendicular, angularly ovate; peristome double, the outer one keel-shaped, spreading, the inner continuous, with the columellar margin very slightly arched. Length 5, breadth $1\frac{2}{3}$ mill.

Truncatella Bairdiana, *C. B. Adams in Ann. Lyc. New York*, v. p. 437, 543.

Pfr. Mon. Auric. p. 187.

β. Rather smooth, the whorls only crenated strongly near the suture and at the base.

Hab. Panama.

9. TRUNCATELLA TERES.

B.M.

Shell scarcely subrimate, cylindrical, rather thin, pellucid, shining, rufous horn-coloured, more or less distinctly sculptured with small longitudinal ribs; suture marginate, strongly folded and crenate; remaining whorls four, rather equal, mode-

rately convex, the last callous, whitish at base, and furnished with a short crest; aperture perpendicular, broadly oval, angular above, and dilated on the right side; peristome simple, continuous; right margin slightly expanded; columellar margin adnate. Length 6, breadth 2 mill.

Truncatella teres, *Pfr. in Proc. Z. S.* 1856; *Mon. Auric.* p. 188.

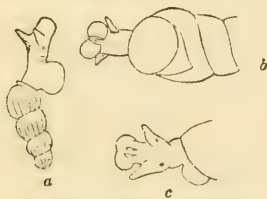
Hab. Isle of Mauritius, and Trinity Bay, Australia.

10. TRUNCATELLA TRUNCATULA (fig. 1).

B.M.

Shell not rimate, cylindrical, rather solid, sculptured with slightly arched, longitudinal ribs, amber-coloured, fulvous or glassy; suture median, slightly marginate; remaining whorls four to four and a half, moderately convex, the last not keeled in front; aperture perpendicular, obliquely ovate; peristome continuous, slightly thickened; right margin curved above, then slightly arcuate; columellar margin adnate. Length 5-6, breadth 2 mill.

Fig. 1.



Animal of *Truncatella truncatula*.

a, Side view of animal and shell.

b, Animal seen beneath as crawling up a glass, taken when the muzzle is exerted.

c, Animal when the foot is extended, in the act of drawing up the shell.

A. Perfect form :—

Cyclostoma truncatulum, *Drap. Hist.* p. 40. pl. 1. f. 28-31.

Lamarck, Hist. vi. 2. n. 27. p. 149; ed. *Desh.* viii. p. 362.

Michaud, Compl. p. 76.

Rossm. Ic. vi. p. 53. t. 28. f. 407.

Potiez et Michaud, Gal. Douai, i. p. 242. n. 22.

Cyclostoma subcylindricum, *Fleming, Brit. Anim.* p. 258?

Cyclostoma concinnum, *Scacchi, teste Philippi*.

Acmea truncata, *Hartm. in Steinmüller Neue Alpina*, i. p. 212.

Truncatella costulata, *Risso, Hist.* iv. p. 125. pl. 4. f. 57.

Menke, Syn. ed. 2. p. 43.

Villa, Disp. Syst. p. 29.

- Truncatella truncatula*, *Deshayes in Lam. Hist.* viii. p. 365.
Anton, Verzeichn. p. 62. n. 2187.
Philippi, Enum. Moll. Sicil. ii. p. 133. t. 24. f. 3.
Reeve, Conch. Syst. ii. pl. 182. f. 5.
Forbes, Moll. Ægean Sea, p. 137.
Pfr. in Zeitschr. f. Malac. 1846, p. 183; *Mon. Auric.* p. 188.
Jay, Catal. 1850, p. 252. n. 5777.
M. E. Gray, Fig. Moll. Anim. pl. 125. f. 14.
Woodward, Man. Moll. p. 137. pl. 9. f. 25.
Küster, Mon. p. 4. 10. n. 1. t. 1. f. 19-23, t. 2. f. 9, 10.
H. and A. Adams, Gen. rec. Moll. ii. p. 310. pl. 88. f. 1.
Truncatella truncata, *Dupuy, Moll. de France*, p. 532. pl. 27. f. 4.
Choristoma truncatula, *De Crist. and Jan, Cat. Mantissa*, p. 3.
Paludina truncata, *Payraudeau, Moll. Corse*, n. 244. p. 116.
Rissoa truncata, *Philippi, Enum. Moll. Sicil.* i. p. 151.

β. With the ribs indistinct.

γ. Shell perfectly smooth, shining.

- Truncatella lævigata*, *Risso, Hist.* iv. p. 125. n. 300. pl. 4. f. 53.
Menke, Syn. ed. 2. p. 44.
Villa, Disp. p. 29.

- Cyclostoma truncatulum*, γ, *Drap. Hist.* p. 40. pl. 1. f. 31.
Rissoa hyalina, *Desmarest, teste Villa*.

δ. Larger, conspicuously attenuated towards the apex, dark amber-coloured or red; aperture larger; peristome furnished with an obtuse distant keel-shaped callus.

Truncatella Hammerschmidtii, *Charp. MSS.*

Truncatella truncatula, var. *Küst. Mon.* p. 11. t. 2. f. 16-18.

B. Imperfect form, with the shell turritid, not truncate; apex pointed; whorls eight; peristome simple. Length $5\frac{1}{2}$, breadth $1\frac{2}{5}$ mill. (*Küst. Mon.* t. 1. f. 10-18.)

- Fidelis Theresa*, *Risso, Hist.* iv. p. 121. pl. 5. f. 59.
Paludina Desnoyersi, *Payraudeau, Cat.* p. 116. n. 245. pl. 5. f. 21, 22.
Paludina strigilata, *Parreyss, teste Philippi*.
Truncatella exilis, *Menke, Syn.* ed. 2. p. 44?
Rissoa Desnoyersi, *Philippi, Enum. Moll. Sicil.* i. p. 151.

Hab. Shores of the Mediterranean Sea, Spain, France, Istria, Italy, Greece; also Great Britain.

11. TRUNCATELLA MONTAGUI.

B.M.

Shell subimate, cylindrical, thin, smooth, shining, pellucid, pale amber-coloured or glassy; suture slightly impressed; re-

maining whorls three to four, nearly flat, elongate, the last rounded in front; aperture perpendicular, oblong-ovate; peristome simple, thin; right margin imperceptibly expanded; columellar margin receding, adnate. Length 4, breadth scarcely $1\frac{1}{2}$ mill.

A. Perfect form:—

Turbo truncatus, *Montagu, Test. Brit.* p. 300. pl. 10. f. 7.

Turt. Dict. n. 65.

Truncatula truncata, *Leach, Catal.* ?

Turritella truncata, *Fleming, Brit. Anim.* p. 103. n. 219.

Truncatella Montagui, *Lowe in Zool. Journ.* v. p. 303.

Thomps. Prep. Fauna Irel. p. 255.

Reeve, Conch. Syst. ii. pl. 182. f. 1.

Thorpe, Brit. Mar. Conch. p. 146. f. 75.

Pfr. in Zeitschr. f. Mal. 1846, p. 185; *Mon. Auric.* p. 190.

Jay, Catal. 1850, p. 252. n. 5771.

Forbes and Hanl. Brit. Moll. iv. p. 317. pl. 99. f. 1.

Küster, Mon. p. 6. n. 2. t. 1. f. 24–26.

H. and A. Adams, Gen. rec. Moll. ii. p. 311.

Zeanoë nitida, *Leach, Brit. Moll.* 198.

Truncatella truncatula, *M. E. Gray, Fig. Moll. Anim.* pl. 123. f. 14.

β. Smaller, glassy. Length 3, breadth $\frac{2}{3}$ mill.

B. Imperfect form:—

Turbo subtruncatus, *Montagu, Test. Brit.* p. 300. pl. 10. f. 1.

Turt. Dict. n. 64.

Turritella subtruncata, *Fleming, Brit. Anim.* p. 303. n. 217.

Glaucothoë Montagui, *Leach, Brit. Moll.* 199.

Hab. Britain, Ireland, Sicily, Istria.

12. TRUNCATELLA SCALARIFORMIS.

Shell rimate, elongate, cylindrical, rather solid, pale yellowish, sculptured with thread-like, rectilinear ribs, which are narrower than the spaces between them; suture deep, slightly crenate by the prominent ribs; remaining whorls five, rounded, the last not compressed in front; aperture perpendicular, roundish-ovate; peristome free, expanded, rather angularly produced above. Length 6, breadth 2 mill.

Truncatella scalariformis, *Reeve in Proc. Zool. Soc.* 1842, p. 197; *Conch. Syst.* ii. pl. 182. f. 6.

Pfr. in Zeitschr. f. Mal. 1846, p. 186. n. 7; *Mon. Auric.* p. 191.

Jay, Catal. 1850, p. 252. n. 5774.

Truncatella scalariformis, *Küst. Mon.* p. 15. n. 12.

H. and A. Adams, Gen. rec. Moll. ii. p. 311.

Truncatella truncatula, var., *Anton, Verzeichn.* p. 62.

Hab. Isle of Annaa, at the roots of palms on the sea-shore
(*H. Cuming*).

13. TRUNCATELLA BARBADENSIS.

Shell subrimate, cylindrical, imperceptibly attenuated towards the apex, rather solid, silk-shining, rufous horn-coloured, regularly sculptured with crowded, obtuse, nearly rectilinear ribs; suture deep; remaining whorls four and a half, very convex, slowly increasing, the last furnished with a whitish basal crest, which surrounds the peristome anteriorly; aperture perpendicular, ovate, roundish above, slightly effused at base; peristome continuous; right margin expanded and slightly reflected, much curved, columellar margin rather adnate. Length $6\frac{1}{3}$, breadth 2 mill.

Truncatella Barbadosis, *Pfr. in Proc. Zool. Soc.* 1856; *Mon. Auric.* p. 192.

Hab. Barbadoes.

14. TRUNCATELLA BILABIATA.

Shell subrimate, cylindrical, slender, solid, opaque, fuscous, faintly ribbed; ribs slightly arched, elevated, obtuse, as broad as the spaces between them; suture deep, simple; remaining whorls four and a half to five, convex, the last scarcely longer than the others, somewhat compressed and callous in front; aperture perpendicular, ovate, imperceptibly angled above; peristome double; the outer one white, callous, spreading, continued into the basal crest; inner peristome continuous, shortly produced. Length $5\frac{1}{2}$, breadth $1\frac{3}{4}$ mill.

Truncatella bilabiata, *Pfr. in Wieg. Arch. f. Nat.* 1840, i. p. 253; *Zeitschr. f. Malak.* 1846, p. 187; *Mon. Auric.* p. 192.

Poey, Memor. i. p. 393.

Küst. Mon. p. 7. n. 3. t. 1. f. 27-31.

H. and A. Adams, Gen. rec. Moll. ii. p. 311.

Hab. Cuba and Isle of Carmen in the Gulf of Mexico.

15. TRUNCATELLA PULCHELLA.

Shell subrimate, oblong, rather cylindrical, slender, rufous horn-coloured or amber-coloured, rarely glassy, shining, rather pellucid, sculptured with scarcely elevated, thread-like ribs, which are smaller than the interjacent spaces, often more

distinct near the middle suture; remaining whorls four to four and a half, moderately convex, slowly increasing, the last generally smooth below the middle, with a short compressed basal crest; aperture nearly perpendicular, oblique, subelliptical, slightly effused at base; peristome simple, continuous, somewhat expanded; right margin surrounded with a slightly prominent crest. Length $4\frac{1}{2}$ –5, breadth $1\frac{1}{2}$ –2 mill.

Truncatella pulchella, *Pfr. in Wiegman. Arch. f. Nat.* 1839, i. p. 356; *Zeitschr. f. Malak.* 1846, p. 186; *Mon. Auric.* p. 192.

Jay, Catal. 1850, p. 252. n. 5773.

Shuttlew. Diagn. n. Moll. no. 7. p. 155.

Poey, Memor. i. p. 393 (excluding the synonyms).

Küst. Mon. p. 10. n. 6. t. 2. f. 11–15.

H. and A. Adams, Gen. rec. Moll. ii. p. 311.

β. More distinctly ribbed, with the peristome subduplicate.

Hab. Cuba, Jamaica, Portorico, St. Thomas.

16. TRUNCATELLA ELONGATA.

Shell subrimate, elongate, cylindrical, rather turritid, truncate, moderately solid, whitish (?), sculptured with extremely crowded, rectilinear, thread-like ribs; suture simple; remaining whorls seven, moderately convex, slowly increasing, the last not compressed in front; aperture perpendicular, elliptical: peristome simple, continuous, imperceptibly expanded. Length nearly 6, breadth $1\frac{1}{2}$ mill.

Truncatella elongata, *Poey, Memor.* ii.

Pfr. Mon. Auric. p. 193.

Hab. Eastern province of Cuba.

17. TRUNCATELLA MODESTA.

Shell much elongate, ovate-conic, yellowish horn-colour, with a white upper margin of the whorls, with about twenty-one prominent compressed ribs, and numerous spiral striae, which are interrupted by the ribs; apex truncate, with the loss of the upper whorls; spire with the outlines somewhat curvilinear; whorls remaining after truncation seven, moderately convex, margined above: aperture subovate, slightly angulated anteriorly. Length (after truncation) 0.175, breadth 0.06; length of aperture 0.045 inch (*C. B. Adams*).

Truncatella modesta, *C. B. Adams in Ann. Lyc. New York*, v. p. 48; *Contrib. to Conch.* no. 8. p. 132.

Pfr. Mon. Auric. p. 193.

Hab. Jamaica.

18. TRUNCATELLA ADAMSI.

Shell scarcely rimate, rather solid, cylindrical, shining, horn-coloured, sculptured with rather distant, obtuse, longitudinal ribs and minute striæ between them; remaining whorls four, moderately convex, the last slightly keeled in front; aperture perpendicular, obliquely ovate; peristome thickened, indistinctly duplicate; outer margin narrowly spreading. Length $4\frac{1}{2}$, breadth 2 mill.

Truncatella scalariformis, *C. B. Adams in Proc. Zool. Soc.* 1845, p. 12; not *Reeve*.

Truncatella Adamsi, *Pfr. in Zeitschr. f. Malak.* 1846, p. 189; *Mon. Auric.* p. 194.

C. B. Adams, Contr. to Conch. no. 1. p. 16. no. 9. p. 182.

Jay, Catal. 1850, p. 252. n. 5765.

Küst. Mon. p. 16. n. 15.

H. and A. Adams, Gen. rec. Moll. ii. 311.

Hab. Jamaica.

19. TRUNCATELLA SCALARIS.

B.M.

Shell imperforate, cylindrical, oblong, truncate, very solid, opaque, brownish flesh-coloured, sculptured with distant, strong, obtuse, nearly rectilinear ribs; suture deep; remaining whorls three and a half to four, convex, gradually increasing, the last short, slightly compressed in front; aperture perpendicular, small, semiovate, slightly angulated above; peristome continuous, thickened; columellar margin callous, adnate. Length 5, breadth 2 mill.

Rissoa scalaris, *Michaud, Desc. du genre Rissoa*, p. 21. f. 31, 32.

Truncatella costata, *Pfr. in Wieg. Arch. f. Nat.* 1839, i. p. 356.

C. B. Adams, Contr. to Conch. no. 1. p. 16.

Poey, Memor. i. p. 393.

Truncatella Cumingii, *C. B. Adams in Proc. Bost. Soc.* 1845, p. 12.

Truncatella scalaris, *Pfr. in Zeitschr. f. Malak.* 1846, p. 188;

Mon. Auric. p. 194.

Jay, Catal. 1850, p. 252. n. 5775.

C. B. Adams, Contr. to Conch. no. 9. p. 182.

Küst. Mon. p. 8. n. 4. t. 1. f. 32-34.

H. and A. Adams, Gen. rec. Moll. ii. p. 311.

Truncatella crassicostata, *Gray, B.M.*

Truncatella crassicosta, "*Sow.*," *H. Adams, Gen.*

Hab. Cuba and Jamaica.

20. TRUNCATELLA CLATHRUS.

Shell scarcely rimate, nearly cylindrical, solid, flesh-coloured, sculptured with rather crowded, arched, slightly compressed

ribs; remaining whorls four, convex, contracted near the suture, the last imperceptibly compressed in front; aperture perpendicular, oblong-ovate; peristome continuous, much thickened; right margin reflexed, columellar margin appressed. Length $4\frac{1}{2}$, breadth 2 mill.

Truncatella clathrus, *Lowe in Zool. Journ.* v. p. 303.

Reeve, Conch. Syst. ii. pl. 182. f. 3.

Pfr. in Zeitschr. f. Mal. 1846, p. 188; *Mon. Auric.* p. 195.

Jay, Catal. 1850, p. 252. n. 5768.

Shuttlew. Diagn. n. Moll. no. 7. p. 155.

Küst. Mon. p. 15. n. 14.

H. and A. Adams, Gen. rec. Moll. ii. p. 311.

Hab. Portorico and St. Thomas.

Similar to *T. scalaris*, but differing by the ribs being more numerous and arcuate, and the last whorl less abbreviated.

21. TRUNCATELLA STRIATULA.

B.M.

Shell rimate, subperforate, turrited, truncate, very faintly striated, opaque, pale flesh-coloured; suture simple, median; remaining whorls five to six, moderately convex, increasing regularly, the last rounded; aperture perpendicular, elliptical, angulated above, brown within; peristome continuous, with the right margin slightly expanded; columellar margin dilated, somewhat spreading. Length 6-10, breadth 3-4 mill.

Truncatella striatula, *Menke, Moll. Nor. Holland.* p. 9.

Pfr. in Zeitschr. f. Mal. 1846, p. 187; *Mon. Auric.* p. 196.

Küst. Mon. p. 14. n. 10. t. 2. f. 32, 33.

H. and A. Adams, Gen. rec. Moll. ii. p. 196.

Hab. Western shore of Australia.

This shell is very similar to that of the genus *Tomichia*, Bens., and may possibly belong to that genus.

Undescribed species.

Truncatella striata, *Sow. in Phil. Mag.* teste *Reeve, Conch. Syst.* ii. pl. 182. f. 4. Perhaps identical with *T. striatula*, Menke?

Truncatella lirata, *Poey, Memor.* ii.

<i>Truncatella aurantia</i> , <i>Gould</i> ,	} quoted in <i>H. and A. Adams</i> ,
<i>Truncatella porrecta</i> , <i>Gould</i> ,	
<i>Truncatella rostrata</i> , <i>Gould</i> ,	

Gen. rec. Moll.

CATALOGUE

OF

PROSERPINIDÆ.

Muzzle short, annulated. Tentacles lateral, subulate, short, distant. Eyes sessile, on the outer side of the base of the tentacles; sides simple, without any membranaceous fringe or lateral beards. The lateral central teeth large, irregular, lobed or dentated. Foot moderate, truncated in front, acute and keeled above behind, with a concavity in the front part for the base of the shell, lined with an extension of the mantle. Operculum none. Shell spiral, depressed; whorls close-pressed, more or less covered with a polished coat. Aperture lunate, with a fold forming a slight truncate canal at the columnar angle. Peristome simple, acute; throat and inner lip with spiral laminæ; axis covered with a callous deposit; the septa between the upper whorls absorbed.

Proserpinidæ, Gray, 1847, in *Proc. Zool. Soc.* xv. p. 182.

Proserpinacæ, Poey, 1854, in *Memor. Hist. Nat. de Cuba*, i. p. 392.

Pfr. Mon. Auric. p. 167.

This family, instituted for the genus *Proserpina* by Dr. Gray, was ascribed by most authors to the family of *Helicidæ* (the animal being unknown), and only by D'Orbigny to *Cyclostomidæ*; but it must evidently be excluded from the *Helicidæ*, because the observations of Chitty, Bland, Poey, Gundlach and Gray have shown the animal to be furnished with only two tentacles, oculated at their bases, and also that the internal walls of the whorls are regularly absorbed, as is the case in the *Helicinidæ* and *Auriculidæ*. (Compare Bland in *Ann. Lye. N. York*, vi. p. 75, and Pfeiffer in *Malak. Bl.* 1854, p. 195.)

The affinity to *Helicinidæ* is so great, that only the want of an operculum prohibits the junction of *Proserpinidæ* with that family, and legitimates the adoption of a separate family for these shells; although H. and A. Adams still enumerate the genus

Proserpina among the genera of *Helicinidæ*, stating, that "possibly it constitutes a peculiar type of organization, which will cause it to become the nucleus of a new family."

At last Dr. Gray, by observation of the animal of a new species allied to *Carocolla eolina*, Ducl., has confirmed the family, and proposed to divide it into the two following genera:—

1. CERES, Gray.

Shell heliciniform, keeled, upper surface rugose, covered with a periostraca, lower surface with a callous polished coat. Mouth provided with lamellæ on both sides. Peristome straight, rather thickened.

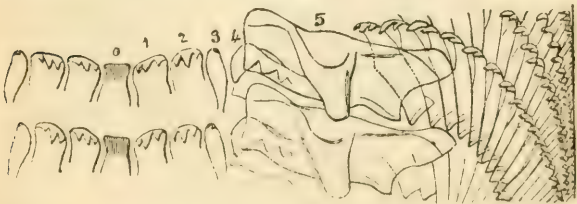
Ceres, Gray in *Proc. Zool. Soc.* 1856, Apr.

Pfr. Mon. Auric. p. 168.

Carocollæ, *Helicis*, *Odontostomatis*, *Proserpinæ*, sp., *Auct.*

Shell rugose and covered with a periostraca above, smooth and polished and covered with a thin callous coat beneath. Mantle free from the back of the neck, with a thick double-edged collar, the outer edge rather reflexed. The front part of the upper surface of the foot near the axis of the shell is depressed into a rather expanded concavity which is lined with an extension of the mantle, having a raised edge near the margin of the concavity. This raised edge is evidently a continuation of the edge of the mantle of the body, sinuated at the columnar and outer upper angle of the mouth of the shell. It is more developed and crumpled up, in the specimens in spirits, on the left side of the concavity; and there is little doubt, in the living state, that this extension of the mantle is expanded out and deposits the polished callous coat of the under surface of the shell and the callosity over the axis; hence the larger size of the left side of the extension.

Fig. 2.



Teeth of *Ceres Salléana*: 0, central tooth.

Lingual membrane of *Ceres Salléana* broad, elongate, with

numerous longitudinal series of teeth. Teeth 00·5·1·5·00 (fig. 2); the central tooth oblong, distinct, with a broad simple reflexed tip: the first and second lateral teeth rather broader than the central one, with a three-toothed recurved tip; the third narrow, elongate, with a slightly recurved end; the fourth and fifth much larger, oblong and irregular-shaped; the fourth about half as wide as the fifth, with three or four dentations on the inner side of the upper edge; the fifth very large, broad, with a large subcentral reflexed lobe; the lateral teeth are very numerous, subequal, similar, compressed, transparent, with a recurved tip, those of the inner teeth of the series being bifid.

This genus is well distinguished from *Proserpina* by its habitus and the characters of the shell.

1. CERES EOLINA.

B.M.

Shell imperforate, conoidally lenticular, rather thin, furnished on the upper side with close-set wrinkles descending from the right to the left side, rather shining, reddish; spire very shortly conoidal, slightly mucronate, sometimes marbled with brown; suture scarcely perceptible; whorls six, rather flat, the last not descending, furnished with a compressed, thin, sharp, elevated keel, inflated beneath, smooth, covered with a whitish or yellow shining callous coat; aperture oblique, rather securiform, modified by six spiral, sharp lamellæ, two on the body of the penultimate whorl, parallel to each other, one rather transverse on the columella, three on the basal part, unequal, visible through the shell; peristome slightly thickened, with a beak formed by the extremity of the keel. Greatest breadth 23, least breadth 19, height 9 mill.

Carocolla eolina, *Duclos in Guér. Mag.* 1834, pl. 30.

Helix (*Helicodonta*) *eolina*, *Férussac in Bull. Zool.* 1835, p. 12.

Odontostoma eolinum, *Pfr. Mon. Helic.* i. p. 11. n. 1.

Proserpina eolina, *Pfr. in Chemn. ed. nov. Helix*, p. 11. t. 100.

f. 10, 11 (from *Guérin*); *Mon. Helic.* iii. p. 290. n. 1.

Albers, Helic. p. 134.

H. and A. Adams, Gen. rec. Moll. ii. p. 309.

Ceres eolina, *Gray in Proc. Zool. Soc.* 1856, Apr.

Pfr. Mon. Auric. p. 168; *Novit. Conch.* i. p. 157. t. 25. f. 1-3.

Hab. State of Vera Cruz, Mexico (*Sallé*).

2. CERES SALLEANA.

B.M.

Shell imperforate, conoidal, rather solid, sculptured above with striæ of growth and finely granulated, yellow or rose-red, covered partially with an opaque, whitish, deciduous peri-

ostraca; spire convexly conoidal, mucronate; whorls eight, scarcely convex, the last not descending, furnished at its middle with a sharp compressed keel, convex beneath, smooth and more or less covered with a yellow polished callus; aperture very oblique, nearly triangular, modified by six lamellæ, two on the body of the penultimate whorl, one rather twisted on the columella, three on the basal part, of which the middle one is stronger: peristome yellow, slightly thickened, obtuse. Greatest breadth 23, least breadth 21, height nearly 12 mill.

Proserpina Salleana, Cuming, *Mus.*

Ceres Salleana, Gray in *Proc. Zool. Soc.* 1856, Apr.

Pfr. Mon. Auric. p. 169; *Nov. Conch.* i. n. 158. t. 125. f. 4-6.

Hab. State of Vera Cruz, Mexico (*Sallé*).

2. PROSERPINA, Gray.

Shell imperforate, heliciniiform, rather globular or depressed, smooth, covered with a polished callous coat on the upper and under surface. Columella one-toothed; body of the penultimate whorl furnished with one or more spiral plaits. Aperture lunate, modified often by palatal plaits. Peristome simple, straight.

Proserpina, Gray, *MSS.*

Sowerby, Conch. Man. p. 237.

Gray, Syn. Brit. Mus. 1840, p. 153; ed. 1842, p. 90.

Jonas in Zeitschr. f. Malak. 1846, p. 10.

Gray in Proc. Zool. Soc. 1847, p. 182.

Pfr. Mon. Helic. i. p. xviii, iii. p. 289; *Mon. Auric.* p. 169.

C. B. Adams, Contrib. to Conch. no. 3. p. 41.

Albers, Helic. p. 134.

Herrmannsen, Ind. Gen. Malak. ii. p. 335.

Jay, Catal. 1850, p. 117.

Philippi, Handb. d. Conch. p. 147.

Bland in Ann. Lye. New York, vi. p. 76.

Poey, Memor. Hist. Nat. Cuba, i. p. 392.

H. and A. Adams, Gen. rec. Moll. ii. p. 309.

Gray in Proc. Zool. Soc. 1856, Apr.

Odontostoma, D'Orb. *Moll. Cuba*, i. p. 237.

Pfr. Mon. Helic. i. p. 11.

Helicinæ et Helicis, sp., *Auctt.*

This genus was first proposed by Dr. Gray as belonging to *Helicidæ*, and adopted by Jonas and others. Nearly at the same time it was described by D'Orbigny under the name of *Odontostoma* (already preoccupied in Zoology), and ascribed with doubt to the family of *Cyclostomidæ*.

The known species may be divided into two sections :—

- A. Provided with palatal plaits (genuine species) § 1. No. 1-2
 B. Destitute of palatal plaits (*Odontostoma*, D'Orb.) § 2. „ 3-6

§ 1. *Palatal plaits distinct.*

1. PROSERPINA NITIDA.

B.M.

Shell imperforate, depressed, nearly discoidal, very shining, amber-coloured or fulvous; spire rather flattened; whorls six, increasing rapidly, joined by a linear, bordered suture; last whorl broad, depressed, scarcely convex beneath, with a callous deposit on the centre; aperture rather triangular, modified by four to five lamellæ, the largest of which is placed on the body of the penultimate whorl (sometimes with another smaller and more entering, parallel to the first), one horizontal, slightly twisted on the columella, and two parallel ones on the base of the last whorl. Height 4, greatest breadth 9, least breadth 8 mill.

Proserpina nitida, Gray, MSS.

Sow. Conch. Man. ed. 2. p. 237. f. 274.

Pfr. in Chemn. ed. nov. *Helix*, ii. p. 11. t. 100. f. 12-15; *Mon.*

Helic. iii. p. 290. n. 2; *Mon. Auric.* p. 170.

C. B. Adams, Contr. to Conch. no. 3. p. 41.

H. and A. Adams, Gen. rec. Moll. ii. p. 309. pl. 87. f. 10.

Helix Proserpina, *Pfr. in Zeitschr. f. Malak.* 1845, p. 84.

Odontostoma nitidum, *Pfr. Mon. Helic.* i. p. 12. n. 5.

β. Much flattened above.

Proserpina nitida, var. *planulata*, *C. B. Adams, Contr. to Conch.* no. 9. p. 174.

Hab. Jamaica.

2. PROSERPINA LINGUIFERA.

Shell imperforate, orbicular, nearly discoidal, slightly convex on both sides, solid, very shining, whitish, yellowish on the middle of the upper side; suture scarcely conspicuous, covered with callus; whorls five, increasing regularly, the last obsoletely angulated, somewhat more convex beneath and covered on the centre with a circular deposit; aperture semioval, five-plaited; two unequal plaits on the body of the penultimate whorl, two parallel ones on the basal margin, and one, which is strong and transversely prominent, on the columella; peristome simple, sharp. Height $4\frac{1}{3}$, greatest breadth 8, least breadth 7 mill.

Helicina linguifera, Jonas in *Wiegman's Arch. f. Naturg.* 1839, i. p. 341.

Proserpina allognota, Jonas in *Zeitschr. f. Malak.* 1846, p. 12.

Proserpina linguifera, Pfr. in *Chemn.* ed. nov. *Helix*, ii. p. 12. t. 103. f. 12-15; *Mon. Helic.* iii. p. 290. n. 3; *Mon. Auric.* p. 171.

H. and A. Adams, *Gen. rec. Moll.* ii. p. 309.

Helix allognota, Desh. in *Férussac, Hist.* i. p. 192. n. 258. pl. 55. f. 13.

Odontostoma allognotum, Pfr. *Mon. Helic.* i. p. 12. n. 4.

β. Smaller, yellowish, with the apex red. Height 3, greatest breadth 5, least breadth $4\frac{1}{2}$ mill. B.M.

Proserpina pulchra, C. B. Adams, *Contr. to Conch.* no. 5. p. 81.

Hab. Jamaica.

§ 2. Palatal plaits none.

3. PROSERPINA PISUM.

B.M.

Shell subglobose, solid, very shining, whitish-yellow; spire convex, blunt; suture linear, covered with callus; whorls four and a half, scarcely convex, the last inflated; aperture rather oblique, almost vertically lunate, modified by two teeth, one transverse on the columella, which is nearly perpendicular, the other approximate to it on the body of the penultimate whorl; peristome simple, straight, with the upper part of its right margin dilated forwards. Height 5, greatest breadth $6\frac{1}{3}$, least breadth $5\frac{2}{3}$ mill.

Proserpina pisum, C. B. Adams, *Contrib. to Conch.* no. 7. p. 108.

Pfr. in *Chemn.* ed. nov. *Helix*, iii. p. 426. t. 149. f. 12-14;

Mon. Helic. iii. p. 291. n. 4; *Mon. Auric.* p. 172.

Hab. Jamaica.

4. PROSERPINA GLOBULOSA.

B.M.

Shell depressed, globular, thin, smooth, shining, greenish-white or yellow; spire short, convex, rather blunt; whorls five, increasing slowly, joined by a suture scarcely perceptible; last whorl convex and covered with callus beneath; aperture narrow, lunate, modified by two teeth approximate to each other, one lamelliform, entering on the body of the penultimate whorl, the other, which is sharp, on the columella; peristome simple, straight, with the right margin arcuated forwards. Height 3, greatest breadth 4, least breadth $3\frac{2}{3}$ mill.

Odontostoma globulosa, D'Orb. *Moll. Cub.* i. p. 239. pl. 18. f. 8-11.

Odontostoma globulosum, Pfr. *Mon. Helic.* i. p. 11. n. 2.

Proserpina globulosa, *Pfr. in Chemn. ed. nov. Helix*, ii. p. 12. pl. 124. f. 19-21; *Mon. Helic.* iii. p. 291. n. 5; *Malak. Bl.* i. 1854, p. 192; *Mon. Auric.* p. 172.

Poey, Memor. Hist. Nat. Cuba, i. p. 394.

H. and A. Adams, Gen. rec. Moll. ii. p. 309.

Hab. Isla de Pinos, near Cuba; also district of Rangel, Cuba.

5. PROSERPINA DEPRESSA.

B.M.

Shell depressed, rather thin, slightly striated, very shining, diaphanous, lemon-coloured; spire very shortly raised, with the apex acute; suture callous, scarcely impressed; whorls nearly five, gradually enlarging, the last broader, scarcely angulated at its periphery, rather flat beneath, slightly excavated near the columella; aperture oblique, lunate, modified by two teeth approximate to each other, one lamelliform, entering on the body of the penultimate whorl, the other, which is sharp, on the columella; peristome simple, thin. Height 3, greatest breadth $6\frac{1}{3}$, least breadth 5 mill.

Odontostoma depressa, *D'Orb. Moll. Cub.* i. p. 238. pl. 18. f. 4 7.

Odontostoma depressum, *Pfr. Mon. Helic.* i. p. 11. n. 3.

Helicina ptychostoma, *Pfr. olim (Mon. Helic. i. p. 12. not.)*.

Proserpina depressa, *Pfr. in Chemn. ed. nov. Helix*, iii. p. 499. pl. 158. f. 7-10; *Mon. Helic.* iii. p. 291. n. 6; *in Malak. Bl.* i. 1854, p. 192; *Mon. Auric.* p. 173.

Poey, Memor. i. p. 394.

H. and A. Adams, Gen. rec. Moll. ii. p. 309.

Hab. Rangel and Cayajabos, Cuba.

6. PROSERPINA BIDENTATA.

B.M.

Shell very similar to *P. nitida*, but much smaller; besides the deep spiral line which accompanies the suture, there are several other feebly impressed spiral lines; the surface is not so smooth, although equally brilliant; the colour is yellowish-green; the aperture has only two teeth, one near the base of the columella, and another a little above it. Specimens of *P. pulchra*, of the same size, have five teeth well developed, as have also the least of our specimens of *P. nitida*. Greatest breadth 0.21. least breadth 0.13, height 0.08 inch (*C. B. Adams*).

Proserpina bidentata, *C. B. Adams, Contr. to Conch.* no. 5. p. 81.

Pfr. Mon. Helic. iii. p. 292. n. 7; *Mon. Auric.* p. 174.

H. and A. Adams, Gen. rec. Moll. ii. p. 309.

Hab. Jamaica.

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